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THE Annals of Hygiene.

(The Official Organ of the State Board of Health of Pennsylvania.)

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Edited and Published by JOSEPH F. EDWARDS, A.M., M.D.
A. L. HUMMEL, M.D., Managing Editor.

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The Annals of Hygiene.

Vol. 3. PHILADELPHIA, JANUARY 1, 1888. No. 1.

Communications.

THE QUARANTINE SYSTEM OF LOUISIANA—METHODS OF DISINFECTION PRACTICED.

BY JOSEPH HOLT, M.D.
President Board of Health, State of Louisiana.

(Continued from page 458, December issue.)

In the sanitary treatment of a vessel in quarantine, there are three processes of disinfection concurrently applied.

APPLICATION OF BI-CHLORIDE OF MERCURY.

The first is the wetting of all available surfaces of the vessel, excepting cargo, but including bilge, ballast, hold, saloons, forecastle, decks, etc., with a solution of the bi-chloride of mercury, made soluble by an equal weight of muriate of ammonia, in the proportion of one part to one thousand of water.

The only objection we have yet discovered is that certain articles, particularly blankets and flannels, treated by the solution sometimes become spotted, and colors liable to "run" when wetted, suffer; but unlike all other chemical agents applied as disinfectants, the textile itself is in nowise injured.

Recapitulating its merits: being colorless, stainless (except as stated), odorless, not injurious to fabrics, perfectly safe to handle for months at a time, easily applied and exceedingly cheap, it is impossible to imagine a substance more efficient and as free from objection in practice. It is indeed the key unlocking difficulties otherwise insurmountable, and rendering practicable in municipal and maritime sanitary work the efficient execution of scientific requirement.

The amalgamating powers of the mercuric salt presented many serious obstacles in the contrivance of an apparatus for its application, all of which have been overcome without sacrificing simplicity, efficiency or economy.

Immediately adjoining the quarantine wharf, and near its water edge, is constructed a heavy frame-work of piles, each twelve inches in diameter. This structure has an ample base, is pyramidal, and forty-five feet in height above mean level of the river. On top of this is a circular wrought iron tank, capable of holding eight thousand gallons of the mercuric solution.

In order to prevent contact of the latter with the iron, the interior of the tank is painted over with three coats of red lead and two of paraffine paint. The top of the tank is closed by a secure cover to prevent access of light to the solution. This, together with the general exterior, is painted black.

On the top of this cover is placed centrally a sixty gallon wooden cask, in which is dissolved the mercuric salt, which is then emptied into the tank through a wooden faucet. Seventy pounds are used for one charge.

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In the tank near the lower edge are three heavy galvanized iron faucets, to each of which is screwed a lead of three-quarter inch, four-ply rubber hose, the farther ends of which lie on the wharf. These are lengthened by additional sections to reach any part of the largest vessel. To the far extremity of each hose is attached a short, wide nozzle, provided with a stop-cock.

During disinfection, all three are simultaneously used, fore, aft and amidship.

For spraying, we use a perforated, heavy block-tin rose, four inches across the face, similar to an ordinary watering-pot spray. These are made with a shank about six inches long, to fit snugly into the open end of the pipe.

On a single vessel we average fifteen hundred gallons of solution, but often use three thousand.

The process requires from thirty minutes to two hours, according to circumstances.

SULPHUROUS OXIDE FUMIGATION.

As soon as the men have completed the work of "bi-chloriding" below decks, the fumigating pipe is then extended from the quarantine tugboat lying alongside. It is lengthened by sections, being fitted together like stovepipe, and conducted down a convenient hatchway to the bottom of the hold or as near the kelson as possible, preparatory to the fumigation of the entire vessel (and cargo if any) with sulphurous oxide. In the case of a sailing ship, one hatchway gives access of the sulphurous gas to the entire hold; but in large steamers the hold is subdivided by bulkheads into two or more distinct compartments, which must be treated separately.

In undergoing treatment, the cargo is not disturbed, except when the removal of bags of coffee is required to permit the passage of the fumigating pipe, which is twelve inches in diameter, down into the dunnage at the bottom of the cargo.

I have given explicit instructions to coffee importers, whereby the expense of removing bags to make this well or shaft through the cargo, may be avoided. It is necessary to have an open, frame-work shaft, allowing a clear inside space of fifteen inches, placed in the centre of the main hatch in a sailing vessel, or in the centre of each hatch in a steamship having bulkhead compartments. The framework of this shaft is set before loading and should be cut flush with the top of the cargo.

This simple arrangement avoids all handling and delay.

When the connections are made and the fumigating pipe is arranged, the fan on the tugboat is started, and the process of displacing with sulphurous oxide the entire atmosphere within the ship begins.

The length of time required to complete the fumigation varies from thirty minutes to three hours, according to size of vessel, number of compartments, etc.

The quantity of commercial roll sulphur used varies from one hundred to seven hundred pounds per vessel.

The apparatus invented for rapidly evolving and supplying the germicidal gas consists in a battery of eighteen furnaces, each supplied with a pan to contain the sulphur during combustion. These furnaces open into a common reservoir, to the farther end of which is connected a powerful exhaust fan. (Sturtevant's No. 29.)

The gas drawn by the fan is driven into a twelve inch galvanized iron pipe, through which it is conducted over the side and down the hatchway of the vessel into the bottom of the hold.

The gas, as it is driven into the vessel, is quite hot, but would extinguish rather than create fire.

The outflow should not impinge directly against bags of coffee or bales of textiles, if it can be avoided, in order to prevent formation of sulphuric acid and some slight injury therefrom at that point.

In treating coffee, and for convenience in some other instances, the vertical lead of pipe into the hold is made of asbestos cloth, closely and heavily woven for our purpose.

Every opening is closely battened during the process, and remains so for at least eight hours after it is discontinued.

The apparatus throughout is made ample in size and power for rapidity of work and economy in wear and tear, by lessening velocity and friction. The fan is run by a special engine at a slow rate as compared with its capacity, but driving into the ship 180,000 cubic feet per hour of atmosphere surcharged with sulphurous oxide.

APPLICATIONS OF DRY AND MOIST HEAT.

While these two processes of sanitary treatment of the vessel are going on, all bedding, ship's linen, cushions, mattresses, flags, mosquito nets, curtains, carpets, rugs, all personal baggage and wearing apparel of whatever description, are removed from the ship to a commodius building in close proximity, in which these articles are treated by moist heat at a temperature of not less than 230° Fahrenheit.

The apparatus for this work consists in a steel, 40-horse power steam boiler, for supplying steam to a superheating chamber a few feet distant, and which I will now describe.

The dimensions of this chamber, taken interiorly or inside measure, are 60 feet long, 11 feet wide and 7 feet high.

The frame work is composed of 3x3 inch seasoned pine lumber, joined as in the construction of a frame house. Upon the outside of this frame work (and corresponding to weather-boarding in the case of a house) is nailed tongued-and grooved flooring material three-fourths of an inch thick by six inches wide.

The inside or interior of the ends, rear and top of the chamber is ceiled with the same material and a flooring of the same is also laid. Upon these interior surfaces is tacked heavy "Russian Hair-cloth or Felting;" and upon this, at intervals of three feet, are nailed parallel strips of wood 1½x2 inches, and, in turn, upon these strips is fastened another sheathing or ceiling of flooring plank, as already described.

This secures an air space between the hair-cloth and inner ceiling. Upon this now smooth interior surface of wood is finally tacked and held in place by very broad-headed nails, or, better, by nails supplied with tin discs or washers, a double layer of "Asbestos Building Felt," well lapped and securely tacked; thus rendering the interior of the chamber fire-proof.

By the foregoing described construction it will be seen that the walls of the chamber, which are eight inches in thickness, consist of seven non-conducting media: first, the outer layer of planking; second, three inches of air space; third, an inner ceiling of planking; fourth, one inch thickness of "Russian Hair-cloth;" fifth, one and one-half inch air space; sixth, a third layer of three-fourth inch planking; seventh, a double layer, or interior lining, of heavy asbestos felting.

The front wall is divided into forty panels, eighteen inches wide each, which represents that number of racks contained within the chamber.

Upon the bars of these racks the clothing, etc., is hung for exposure to disinfection by moist heat.

These racks are constructed with a front and rear panel united by horizontal bars, six to each side. Each rack is suspended overhead, on travelling rollers, upon an iron rod which extends from the rear wall of the chamber to a support ten feet in front of the chamber; the rod, therefore, being twenty feet in length.

By this arrangement overhead, the racks may be drawn out and pushed in with facility, thus avoiding tracks or rods on the floor obstructing the movements of employees.

When drawn out the full length of ten feet, the rear panels of the racks securely close the chamber as do the front panels when the racks are pushed in; thus admitting of the heating of the chamber during the time of hanging the articles of clothing, etc., on the rack-bars preparatory to disinfection.

For this admirable device, and indeed, for the entire skeleton of the super-heating chamber, including the dry-heat double steam coils, we are indebted to the Troy Laundry Machinery Company, Chicago, Ill. We have found the purchase of this apparatus, constructed to include certain of our specifications, to be the most economical and satisfactory we could have desired.

The interior surface of each front panel is lined with a layer of Russian hair-cloth, over which is applied a double layer of asbestcs felting.

At intervals of seven and one-half feet a bulkhead of one inch tongued-and-grooved flooring is constructed, subdividing the chamber into eight compartments. These bulkheads, or partitions, are made fire-proof by a covering of a double layer of asbestos felting.

The object of this arrangement is to provide against the spread of fire in the event of its occurence.

In addition to this provision there is a double lead of one-inch fire hose connected with a steam pump near the boiler, and at all times ready, within fifteen seconds' notice, to turn on two streams of water upon any rack upon which the fire might have originated.

These minute specifications concerning provision against fire are particularly appreciated by ourselves; it cost us two fires and the destruction of a large amount of property to learn a lesson which experience alone could teach. Lacking experience and precedent, these accidents could not have been foreseen, and therefore could not have been provided against. They were the result of an underrating, and failure to appreciate the prodigious force the contrivance invented placed at our will to invoke.

Under the present arrangement, including early use of free steam, fire is hardly possible; but if it should occur we are prepared to draw out instantly the burning panel, to strip it of clothing and to put out the fire.

With reasonable care and watchfulness on the part of the employees there need be absolutely no danger of loss by fire.

The superheating of this chamber is so provided as to furnish at will dry or moist heat, or both; and by a turn of the hand a temperature of 300° F. can be obtained.

Within and at the end of this chamber, next to and connected with the boiler, are two manifolds, one above the other, to which is connected a system of forty-five three-quarter-inch steam pipes (aggregating 5,509 lineal feet), placed horizontally near the floor of the chamber, running its full length, and supplied with a "bleeder" for conveying off the water of condensation.

This double coil furnishes the dry heat.

Above and in close proximity to this system of pipes is extended a horizontal screen of galvanized iron one-half inch mesh, to catch and so prevent the coming in contact with the super-heating pipes, any article falling from the racks.

The moist heat is supplied by a one inch steam pipe laid centrally in the midst of the above described dry heat pipes and running the entire length of the chamber, constituting a steam-main, connected with the boiler and controlled, as the others, by a ball-valve on the outside.

This pipe is perforated by eighty one-twelfth inch holes, so placed as to furnish steam to each rack.

During the time of hanging the articles of clothing, etc., on the racks, the dry heat is turned on and the temperature raised to about 190° F., made known by a thermometer having a large mercurial column, and suspended near the centre of the chamber, working on a slide or travelling rod in such a manner, when it is desired to make a reading, as to allow of being drawn forward (by a cord extending outside) to a long narrow pane of glass set in the panel. The thermometer should have a scale of at least 275°F.

As each rack is filled it is put back into place. By the time the last of the articles have been hung on the racks, the entire mass of the material within the chamber has attained a temperature between 190° and 200° F., when free steam is turned on; the thermometer speedily rises to a point varying between 230° and 240° F., at which it is maintained for a period of twenty minutes.

The steam pressure in the boiler, at the beginning of this process, registers between 100 and 110 pounds by the steam gauge; at the end of the process of blowing in steam the pressure will have fallen to about 60 pounds.

The steam is now entirely cut off from the chamber, the racks are drawn out and their contents removed.

During the process of steaming, every article is perceived to be saturated and intensely hot, the steam freely permeating to the interior of mattresses, double blankets, etc.; but so great is the heat in the texture of the fabrics as to immediately expel all moisture upon drawing the racks and exposure to the open air. Shirts, collars, etc., instantly assume the crisp dryness they possessed before exposure, losing the musty smell of long packing in a trunk. Silks, laces, the most delicate woolen goods show no signs of injury whatever from the treatment.

Of course, articles of leather, rubber and whalebone would be injured by the heat, and are therefore disinfected with the mercuric solution, and not permitted to go into the heated chamber.

Time required to charge a chamber with apparel for disinfection, thirty minutes; time required for moist heat, twenty minutes; for removal of articles, fifteen minutes; a total of sixty-five minutes.

A large steam ship, particularly a passenger vessel, may require two or three charges of the chamber.

Amount of coal consumed: from two to four barrels per vessel.

In the summer of 1885 we devised and put up a chamber of the above general plan, but wholly inadequate as to size for the requirements of our service. This was replaced by one operating on the same principle, but fifty feet long, and supplied with a twenty-horse power boiler, which latter proved too small for rapid work. This apparatus was burned last spring.

We prepared the plans for the foregoing described apparatus during the summer of 1884. Obtaining a liberal appropriation of $30,000 from the State Legislature for the avowed purpose of establishing a new system of quarantine through the elaborations of purely experimental work; and thoroughly endorsed and sustained in all our efforts by the progressive spirit of the press of New Orleans and by the merchants, we put the new system into practical operation, and threw open the Mississippi to commerce June 10, 1885.

As it stands to-day, we sincerely believe in a nearly perfected state, it is the consummation of experimental effort, through a long and tedious process, beset with difficulties of the most perplexing and often disheartening kind.

Without precedent; having to deal with natural forces of prodigious power; repeatedly encountering unexpected difficulties; meeting with accidents; obliged continually to devise improvements upon our several inventions, and continually combatting a surly discontent and sometimes violent opposition from those subjected to the sanitary processes, while these were still in an imperfect and unsatisfactory stage of development, the modernizing of quarantine and bringing it into line with other branches of science and art in the general progress, has been an expensive and difficult task.

We submit to your Honorable Committee the foregoing plans and specifications of the "System of Quarantine" established by the State of Louisiana in order to place the results of our experience in the hands of those who, like ourselves, are compelled to resist pestilential invasion by maritime quarantine.

We do this, encouraged by the hope that others may find in these results matter worthy of consideration and beneficial in strengthening their defences against a common enemy.

THE FOLLOWING ARE THE REQUIREMENTS IMPOSED UPON ALL VESSELS ARRIVING AT THE QUARANTINE STATIONS IN THE STATE OF LOUISIANA.

During the quarantine period, beginning about May 1st and ending October 31st:

All vessels arriving at the several quarantine stations in the State, together with their crews, passengers and their cargoes, shall be subjected to the inspection of the quarantine officers at the said stations.

All vessels, together with their cargoes, crews, passengers and baggage, arriving at the Mississippi Quarantine Station from inter-tropical American and West Indian ports, shall be subjected to thorough maritime sanitation, according to the following schedule:

First Class—Vessels arriving from non-infected ports.

Second Class—Vessels arriving from suspected ports.

Third Class—Vessels arriving from ports known to be infected.

Fourth Class—Vessels which, without regard to port of departure, are infected; that is to say, vessels which have yellow fever, cholera or other contagious or infectious diseases on board at time of arrival, or have had same on voyage.

Vessels of the first class to be subjected to necessary maritime sanitation at the Upper Quarantine Station, without detention of either vessels or persons longer than may be necessary to place such vessels in perfect sanitary condition.

Vessels of the second and third classes to undergo the same conditions, together with detention for observation for a period of five (5) full days from hour of arrival in quarantine.

Vessels of the fourth class to be remanded to the Lower Quarantine Station, there to undergo sanitation and detention of vessels and persons such length of time as the Board of Health may order.

The five days' detention, as above provided, shall apply to all ports of the Gulf of Mexico and the Caribbean Sea, exception being made in regard to vessels coming from ports south of the Equator, whose period of detention shall be three (3) days.

All vessels arriving from Mediterranean, or other ports known or suspected to be infected with cholera, or which may hereafter become infected, shall be subjected to maritime sanitation and such detention as the Board of Health may determine.

Vessels arriving from the above named ports and places, and belonging to the second, third, or fourth class, as set forth in the foregoing schedule, shall not be allowed to pass the Rigolets or Atchafalaya Quarantine Stations, or other State quarantine stations which may hereafter be established, without having undergone a period of detention of forty (40 days), and thorough cleansing and disinfection.

SPECIAL SUGGESTIONS TO OWNERS, AGENTS, MASTERS OF VESSELS AND PASSENGERS.

The Louisiana State Board of Health recommends the following suggestions to agents, owners, masters of vessels and passengers for the purpose of facilitating the work of quarantine officers and reducing the period of detention to a minimum:

1. That vessels should be stripped during the quarantine season of all woolen hangings, carpets, curtains and such like materials, and upholstered furniture, as far as practicable. Hair or moss mattresses to be replaced by wire or wicker beds.

2. That as far as possible vessels trading with tropical ports should be manned with acclimated crews.

3. Masters of vessels, ships and consular agents are earnestly requested to instruct passengers from quarantinable ports to dispense, as far as possible, with baggage which may be injured by wetting, in case of pestilential outbreak on board, while undergoing disinfection. Such passengers are especially warned against bringing silks, laces, velvets and other fabrics of delicate texture, as they will be compelled to assume all risks of injury.

4. While in ports infected with yellow fever, vessels should be anchored out in the harbor when this is possible, and the crew prohibited from going ashore, especially at night.

5. When practicable, cargoes should be loaded in such a manner as to allow access to the pumps, and also to enable the quarantine officials to pump out and wash the bilge.

6. Special attention should be given to cleanliness of vessels and persons, and provision should be made for all possible ventilation of the entire vessel. The best disinfectants and instructions for using same can be obtained by application to the Board of Health or any of its officers.

7. Masters should, before arrival, see that the bilge is thoroughly pumped out and cleansed, and that the entire vessel be put in such good sanitary condition as to permit of the least possible detention. Fruit vessels particularly should be kept thoroughly cleansed for the purpose of avoiding delay at the Quarantine Station.

8. Vessels observing the above recommendations will receive special consideration at the Quarantine Station, detention and cost of cleaning, disinfecting, etc., being materially lessened thereby.

HINTS ON THE CARE OF THE MIND AND NERVOUS SYSTEM.

BY CHARLES K. MILLS, M. D.,
Professor of Diseases of the Mind and Nervous System in the Philadelphia Polyclinic and Neurologist to the Philadelphia Hospital.

ABSTRACT OF A LECTURE DELIVERED BEFORE THE YOUNG MEN'S CHRISTIAN ASSOCIATION, PHILADELPHIA, SEPTEMBER 22, 1887.

Specially reported for THE ANNALS OF HYGIENE by William H. Morrison, M. D.

Gentlemen:—The "Care of the Mind and Nervous System" is a subject broad and deep; instead of one hour, many hours might be properly devoted to its discussion. It is therefore necessary that

I should limit myself in order that something practical and tangible may come out of this talk. To a certain extent the nature of my audience will help me to this limitation. I understand that these talks or lectures are intended chiefly for young men. This will enable me to omit advice which would be especially applicable to the other sex, and also to go a little further in what I say to you. It also permits me to leave out almost entirely the subject of school education and training. These talks, I understand, are designed chiefly for those who have finished their school work and are engaged in business of some kind; are earning a living, in other words.

I will not discuss the physiology of the mind and nervous system, although to get at the best possible understanding of our subject it might be well to do this; nor shall I go into that problem which has so much attraction for many, namely, the question of the relation which the mind bears to the body—whether as many believe the mind is something which exists as an entity, separate from the body, or whether it is little or nothing more than a secretion, or, at least, outcome of the brain and nervous system. These things do not necessarily concern us in a talk of this sort; but I start with a simple proposition, as old as the hills, namely, in order that we may have a sound mind and keep it sound, we must have a sound body and keep it sound. This does not necessarily imply that every part of the body shall at all times be sound, although, in the widest sense possible, this is almost true.

The mind manifests itself chiefly through the nervous system, and through the highest expansion of this system the brain, and we therefore direct our attention more particularly to the growth, the development, and the health of the brain. After thinking it over it seems to me the best way to look at the subject is under the head of a few simple propositions, a few hints and suggestions as to what we should do, and what we should avoid doing. These hints and suggestions, then, will be given under seven heads: (1) Reading; (2) Morbid thinking; (3) Self-study; (4) Worry and overwork; (5) Physical exercise; (6) Sleep; (7) Sexual abuses and excesses.

In the first place let me say a few words about reading and literature. I am directing my thoughts, not to those who make literature and intellectual pursuits the business and special object of their lives, but those who use literature as a means to certain practical ends in self-development and the conduct of life, but not necessarily in connection with their bread winning occupations. The first advice that I give is to read good books, but not too many of them. The aim of many young men seems to be not to read that which is good in quality, but to cover much ground in their reading. The greatest thinkers, the hardest workers in any given pursuit, those who turn out the highest intellectual results in their work, whether professional or otherwise, are, as a rule, so far as my experience goes, not extensive, or certainly not diffuse readers.

An account of Mr. Gladstone's habits of reading, interesting in this connection, recently went the rounds of the newspapers, although its source is not known to me.

"Science, art, poetry, travel," says this account, "have all loved to pour their riches into his lap, and all have found him a lover and a student. His mode of working is persistent and characteristic. He never reads a book through at once, unless it be a short one, or its subject merely recreative. If reading for results, for the clearing up of doubt, for the construction of an argument, for the strengthening of a conviction; he stops as soon as he feels that a substantial gain has been made; and then he reads the same over twice or thrice, be it paragraph or page or chapter, until he has so perfectly absorbed it, that he can almost repeat its text. He has for surplusage the scent of a hunter for a false trail. He will leap over parts of books as blithesomely as the jumper takes the ditches and the fence on the way to the fox cover. So he rarely reads Froude for history, because he likes highways and daylight for facts, and dislikes the delays of excursion into the undergrowth and shrubbery of a man's imaginative treatment of them.

"He does little desultory reading of late years. He reads for a definite purpose. He has always had this scientific habit. To it he owes his thorough mastery of every subject upon which he has spent time. To it he owes his ignorance of many subjects, which have never come within the duties of his state. He never read, even when a young man, for the mere sake of reading."

My advice is to read, but to limit your reading to a carefully selected field. Many of you probably know the oft quoted advice of Emerson, "First, to read no book that is not a year old; second, to read none but famed books; and, third, to read only books that you like." This advice, if understood correctly, is good for the young men and the old; not that it should be strictly and literally adhered to, but in these three propositions are contained the substance of the best advice with reference to literature.

I certainly should not like to place myself as opposed to all newspapers, and thus consign myself to the ranks of those who, when steam-cars were about to be introduced, objected to them lest the smoke from the locomotives should discolor the wool on the backs of the sheep. Newspapers are great levers for good. They have accomplished much for the individual and for the race; but the newspaper reading which is indulged in to such an alarming extent, not only by young men, but by all grades and conditions in society, does much to impair strength of mind and good habits of thinking. It is an appalling sight to see an individual buy, and put at his side for the purpose of reading, half a dozen or more of the eight to twenty page newspapers of the day. In several ways this unnatural use of newspapers does harm mentally. The papers waste valuable time which could be better devoted to the reading of books, particularly the classics of our own and other languages. They do harm through the morbid propensities which they create or call forth, because of the peculiar class of facts which, in certain newspapers more particularly, and in all to a certain extent, are brought before the public mind. Man is an imitative creature, and he is particularly inclined to imitate in a morbid direction. A newspaper filled with accounts of rapes, of murders, of arson, of prize fights, and all manner of evil, often to the exclusion of more important things, does harm especially to those with morbid tendencies, by weakening the will and unduly stimulating the emotions.

The same remarks apply to a large extent to periodical literature. I take it that it is good advice to give a young man that he should read a good daily newspaper, but he should limit himself to one or at the most two. If he can indulge in a Magazine he should buy the best and limit himself to one. He should also restrict himself to one or two weekly periodicals. Doing this, he will have time left for the cultivation of the mind by classical books, and special books in his own line. The books he selects should be such as have received the stamp and endorsement of those who know what good books are. The same remarks also apply to the reading of romantic literature, to the reading of novels.

Much time is spent in selecting the best hundred books that a man should read. This is largely a fruitless effort; but is it good advice to say to you to limit the number of books that you read to those of the best quality.

Learn not only what to read, but how to read. I read in an educational journal the other day of a distinguished college professor who said that the greatest difficulty that he had with students, who came to him after they were supposed to be educated in the elementary branches, was that they did not know how to read books that were placed in their hands, He illustrated the point in this way. The student takes a book and reads the description of an experiment, or the description of a piece of mechanical apparatus, the parts which compose it, the manner of using it, the way to take it apart and how to put it together again. He attempts to repeat the experiment, but utterly fails. He reads again and perhaps again fails. The trouble is that he had not been trained to read so as to understand.

"Reading," says this writer, consists in translating symbols that appeal to the eye with corresponding sound symbols, which again ought to call up definite ideas. In the cases cited these symbols are the names of material things and of their relations. If the whole process is complete, the imagination will picture the parts and their relations, and the picture will be accurate in the details; because a rightly trained mind will not rest till every symbol has its corresponding definite image. Thus working constructively, the imagination ought to build as the reader progresses, so that at the conclusion of the reading he should say, "I see it." This requires considerable imaginative power. The details are not only to be clearly grasped or imaged, but held and combined, so as to be seen in their relations. It is manifest that in these cases there is a complete break-down in the effort to do this. The imagination has not been skilfully trained. It is not strong enough. It does not respond to the verbal symbols, and the process breaks down in its last and most vital stage.

But this is not the whole difficulty. In these cases the persons abandon the effort to see things as a whole, and resort to the objects to help them. They have only to do one thing at a time precisely as they are directed; and they fail in this. It is evident that they do not take in the details distinctly. The language is definite, but their ideas are vague and confused. They are capable of uttering to themselves the words which say do one thing, and in response of doing quite another thing. They are somewhat in the condition of Sir Hudibras:

"His notions fitted things so well
That which was which he could not tell."

Thus we arrive at the fundamental difficulty, and find it to be essentially what Rousseau points out in his tirade against books:

"*The abuse of reading is the destruction of knowledge.* Imagining ourselves to know everything we read, we conceive it unneccessary to learn it by other means. Too much reading, however, serves only to make us presumptuous blockheads." (*Intelligence.*)

Reading, then, does not consist simply in passing over a certain number of printed pages. Learn in reading to know that which has been read, even if this requires twice or thrice going over a page. Read often with the pen in hand, although this rule will perhaps not always apply. Learn to put down a book after reading it; ponder, and analyze, and try to reproduce before the mind's eye the picture of what has been read. Better to read in this way a page, than to read a thousand pages by simply passing over them. I recall the case of an insane patient, formely in the Pennsylvania Hospital for the Insane, and later in a private institution. I never saw this young man without a book in his hand. He would carry it with him as he walked about, and when he sat down it was still before him, his eyes rapidly passing from page to page. Yet the mind of this young man was an absolute blank to any ideas conveyed by the book he seemed to read. He was an extreme illustration of the point which I desired to make with reference to useless and absurd reading.

(*To be concluded.*)

TYPHOID FEVER AT THE NORRISTOWN INSANE ASYLUM.

November 25, 1887.

Dr. Benjamin Lee,
Sec'y and Exec. Officer State Board of Health:

Dear Sir:—In accordance with your instructions, on November 16th, I went to the Insane Asylum at Norristown, and made a thorough investigation of the entire place, in the endeavor to determine the cause of the prevalence of fever in that institution.

I was informed by the Superintendent that there had been but two cases in the male department, the balance, thirty in number, having occurred in the department for females. The two males recovered from the disease, but have both since died of other diseases. Both were of a very mild type. One occurred in July and the other in October.

The first case in the female department occurred August 3d. This patient was removed to her home, and died on the 10th. The next was on the 6th, and died from certain complications. The cases now occurred on the 9th, 20th, 23d, 25th, 27th, 28th, 29th; September 1st, 2d, 4th, 5th, 6th, 7th, 8th, 11th, 12th, two on 14th, 21st, 26th; October 4th, two, 9th, 14th, 17th, 18th, 30th; November 14th. Two attendants were taken sick September 3d and 4th. One additional case died, evidently, from epileptic convulsions. Almost every case was of a mild form, and both cases that died were only recognized as real typhoid by the evidences in the autopsy. The epidemic seemed to have ceased. Up to this writing I have learned of no additional cases. The authorities of the institution were early on the alert to learn the cause of the disease. Of course, as in the vast majority of insane people, the cases attacked were already in an enfeebled condition, requiring but little to induce the disease.

The water, ice and milk used by those who were subjects of the fever were each examined by competent authorities, and all these articles were pronounced to be free from any cause of disease.

By the most careful examination, we are reduced to two possible factors for the causation of the fever. First, the evil effects of overcrowding acting upon people already of enfeebled system; second, contamination of the air by the reservoir for the separation of the solid from fluid portions of the excreta.

The dormitories contain 14,580 cubic feet, and usually are occupied by twenty-two patients nightly; deducting the usual allowance for space occupied by patient, bed and beddings, leaves about 650 cubic feet of air for each. The single rooms contain 1188 cubic feet, with frequently two patients in a room. Added to this, the air of the corridors is vitiated by fifteen to thirty patients sleeping in them at night. These were only intended to be occupied in the daytime.

When we reflect upon the fact that the lowest amount given by any authority as much in excess of this, we are compelled to regard the excessive number of patients in each dormitory a prominent factor in lowering the standard of health, and predisposing these already enfeebled people to attacks of disease from slighter causes than are usually needed.

The above mentioned reservoir is at all times open, and is about two hundred feet from the windows of the wards of the female department. The excreta from all the wards, etc., runs directly to this "flush tank," as it is called, to allow the solid matter to settle, while the fluid parts run off, and act to fertilize the ground over which they flow, as occasion may demand.

No other portion of the sewage system could be found in any way objectionable, and it is regarded as nearly perfect as may be. No way was found by which the drinking water could have been contaminated from leakage.

That this tank was most likely to have been the cause by direct contamination of the air drank in by the inmates is shown by the following facts.

With the exception of but two cases, all those suffering from fever were in the wards directly exposed. In proof of this I submit also a brief report from Dr. Bennett, showing location of cases.

Again, with a belief that this "flush tank" might have been the spark which started the fire, the authorities opened the pipe by which to direct the flow of sewage away from the tank and permit it to flow through the discharge pipe to the irrigation field. Since this time no new cases have occurred.

In conclusion, I deem it wise for the authorities in charge to be extremely guarded in again using this "flush tank," and do all in their power to bring to the notice of those empowered to order cases into this Institution, the already crowded condition of their wards.

Respectfully submitted,
Wm. B. Atkinson, M. D.,
Medical Inspector.

NATIONAL QUARANTINE.*

The College of Physicians of this city, at a meeting held December 15, inaugurated a movement to establish a national quarantine system at all ports of entry to supersede existing local quarantine regutions, by adopting the report of a committee appointed last October to consider the subject. The report is in the form of an address to all medical societies in the United States, urging their co-operation in bringing about a more effective system of maritime protection against the importation of pestilential diseases.

The report is that of the committee appointed by the College of Physicians to consider the present danger of the importation of cholera into this country, and was read by the chairman, Dr. J. C. Wilson. The other members of the committee are Dr. E. O. Shakespeare and Dr. R. A. Cleeman. The report begins with a statement that legislation on sanitary matters has been only enacted under the spur of imminent danger, or under fresh memories of disastrous visitation. Health laws are declared to be the result of emergencies, while the interests of rival ports, political influences and the parsimony with which money for the protection of health has been doled out, have crippled their efficient administration.

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* From *The Press*.

The claim that quarantine regulation, however thoroughly enforced, would be ineffectual to protect the general public against infectious diseases, and that the State should rather expend money to remove local conditions favorable to the spread of epidemics is met by the assertion that not until this country shall have intelligently spent at least $300,000,000 can it be expected to have reached a condition of public health in which it could possibly be wise to abandon maritime quarantine and local hygienic regulations. England has in ten years spent this sum for the latter purpose in her compact territory out of the tide of immigration and out of the latitude of yellow fever.

"Two courses," the report says, are open. "Either a practical abandonment of the public to a more or less individual and fruitless struggle with the agents of contagion and infection in whatever localities the movements of immigrants may convey them; or an intelligent, constant, earnest and vigorous effort to destroy them at ports of entry." The cost of attempting to prevent the spread of contagion among hundreds of scattered towns is infinitely greater than that which would place the ports in a nearly perfect state of defense against it, while the loss to the public caused by a single wide-spread epidemic would be greater than the cost of maintaining a perfect quarantine establishment for years. Immigrants brought in large numbers in crowded steerage and easily carried to all parts of the country, many of whom carry with them to their final destination active germs of pestilence, multiply the dangers.

It is rare that small-pox or cholera have been brought to this country except by the immigrant class.

The first proposition of the report is that "present methods of independent quarantine provided by seaboard states and cities are essentially defective and inefficient," because of inadequacy of establishment and faults of administration. Only four of the stations on the Atlantic and Gulf coast have anything like adequate provisions, viz., Gross Isle, below Quebec; the Boston Station, on Galops' Island; that in New York Harbor and those in the Mississippi, below New Orleans. Of the intervening stations, the committee find that "the greater number constitute quarantine stations merely in name."

Of faults of administration the report cites the fact that out of 424 vessels arriving at Quebec during the quarantine season of 1885 only thirty-two vessels were examined at all. "Equally serious faults exist in New York Harbor, as shown at a time when cholera actually existed in the hospital, daily finding new victims among 500 Italian immigrants on Hoffman Island." The absence of resident medical officers, both at the hospital on Swinburne Island and at the quarantine of detention on Hoffman Island; the absence of any adequate sanitary police force on the latter island; no daily inspection, such as would make prompt insolation of new cases possible, and the unreasonable detention of 500 immigrants not sick, under circumstances of great hardship and exposure, are cited as some of these faults.

"And this was the situation," the committee declare, "after cholera had continued to prevail in countries, the ports of which were in constant communication with New York for a period of four years and after the entire public press of the United States had persistently called attention to the ever-present danger of its reaching our shores."

The history of epidemic diseases in this country establishes the fact that there is always difficulty in obtaining sufficient appropriations for the proper maintenance of quarantine stations. The port of New York is in the following peculiar situation respecting the relations of local health boards: The principal quarantine officer is ex-officio a member of the Municipal Board of Health of the city and of the State Board of Health and also of the Quarantine Commission. Neither the State nor the municipal boards have a voice in the control of quarantine. Each of the three boards is independent of any supervision or control by any of the others. The president of the Municipal Board of Health in a communication to Mayor Hewitt, explicitly denies knowledge of affairs at quarantine, and states it would be improper for him to discuss it, though the quarantine officer is a member of that same board.

The report declares that it is natural that municipal organizations should pay little regard to the welfare of distant communities. The committee argues that a national system is necessary, on the ground that only by this means a uniform establishment and administration can be assured, because the national Government alone can assume the expense of complete establishment at every port according to the requirement of each and without regard to the revenue derived from the shipping of any. Its benefits would inure to the welfare of the whole country. It would tend to allay undue anxiety, prevent panic and favor a reasonable sense of security. It would not necessarily supersede any existing arrangements regarded by local authorities as expedient.

The special advantages claimed for a national organization are: Suitable buildings and appliances at all ports; efficient corps of trained officials and assistants always on duty; the practicability of a concentration of force, money and attention at any port without loss of time; officials under control of the National Government free from local, political and commercial influence; full and reliable consular reports and sanitary inspection of emigrants at ports of embarkation; the enactment of laws organizing a central bureau of control of medical officers, nurses, sanitary police, laundrymen, engineers, officers and crews for boarding tugs at stations to be equipped at every port of entry in the United States.

The report concludes with a brief summary of the foregoing statement and an appeal to all medical organizations to further the scheme by their aid. The recent visitation of cholera, it is argued, should be used as an opportunity to arouse public sentiment, and show legislators the necessity of the proposed change.

Medical societies are asked to pass formal resolutions recognizing the necessity of a national control of quarantine, and recommending the subject to their representatives in Congress to enlist popular support of such legislation, and to influence the local medical and secular press.

After general discussion the report was adopted.

Special Reports.

REPORT OF THE PROCEEDINGS OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF PHYSICAL EDUCATION.

(Specially reported for THE ANNALS OF HYGIENE.)

(*Concluded from December issue.*)

DISCUSSION ON DR. HITCHCOCK'S PAPER ON MEASUREMENTS.

DR. SAVAGE:—I have listened to this paper of Dr. Hitchcock's, with a great deal of interest, and I am only sorry it was not longer. It is surely interesting to listen to the experiences of others in this work, and to seize every opportunity to improve in our work as much as possible. In my opinion the greatest step in this direction was taken two years ago by Drs. Hitchcock, Sargent and Anderson, when they met at Cambridge to settle upon a system of measurements.

By all of us following the same instructions we are getting thousands of these measurements every year, and thus we shall finally arrive at some conclusions as regards the typical man.

We are all too busy to record measurements which are worthless when taken, and if experience teaches us that some of these we are now taking are unreliable we should dispense with them. The so-called test of the strength of the lungs is not strictly a lung strength test, and it is the differences which occur in this test which makes the difference between one man and another apparently of equal strength. Then, again, it is not the attachment of the muscle upon the bone, but rather the relative length of the bones, thus giving the longer or shorter levers and causing a difference in the strength, and we can better diagnose our condition by taking more account of the length of the bones.

Anthropometry is doing much for us; it is giving us a standard, and it also enables us to prognose the final result with greater certainty. Different measurements can add to our knowledge, and it seems to me to be desirable, instead of giving up the length of the foot to retain it, and I would reccommend the taking of the length of the heel also. I would also recommend that a rigid physical examination should be made in every case, and lastly that notes should be made in every individual case, and entered upon the record of the sports. It behooves us to make our observations as accurtely as possible.

Dr. Sargent:—I have listened with considerable interest to the paper, and to the remarks of the gentlemen who followed, and though I say, with interest, it is with interest mixed somewhat with pain, because if there is anything disheartening it is to be misunderstood in some one thing which you have been at great pains to explain to some friends and have them go of and straightway set up opposition systems, to what they are pleased to term Dr. Sargent's system. Dr. Sargent, I wish it understood, has promulgated no system; he has merely given to the world some of his results in the hope that they might perhaps be of assistance to some one.

I started out some years ago in search of truth and have been criticized for not publishing my statistics, but I have not considered it worth while to publish them at present, for you all know how utterly fruitless such statistics are, unless you can deal with large numbers. I thought all these gentlemen, who came to my school some years, ago would send me the results that they might get, and thus we would soon have an immense number of statistics to get our averages from; but so far they have not done so, but have set up opposition systems, so-called.

We are in a new field and have nothing as yet as a basis to work from, and to get the grounds upon which to work requires the gathering of an immense number of statistics.

I have had the privilege of looking over the researches of other countries and we actually stand head and shoulders above every other country in this work.

No other country has undertaken to do what we have; out of the whole world there is nothing for us to base our work upon; we must make the basis for this work ourselves, and this is not the work of a year or two years; it is a life work.

I have taken it up as my life's work, and the articles published in "Scribners" are only the beginning of it.

We must have something for a working basis; something which is the result of an immense number of measurements, and I say it is absolute folly for this association, or any other, to say that the basis deduced from a thousand measurements shall be considered the standard.

Here raises the question: can any one thing be taken as a standard, the size of muscles, breadth of chest, or height of a man? Do these have any but a relative significance?

What does any one of these signify to a man or boy?

It signifies very little to a boy if his biceps is two inches or ten inches; he measures his strength by what he can do, compared with some other boy. Who can draw or picture to himself a man with a 38-inch chest? What does the height signify to a boy's mind? Above the average or below the average does not indicate anything to any man's mind.

According to these tables the average height and weight of a young man twenty-one years old is greater than the average height and weight of a young man twenty-two years of age. We all know this cannot be so, and yet the tables show this. Why they do is on account of the observations made. We all know that the great number of men who come to college are from nineteen to twenty-one years of age, and by taking them you get a picked class, and, as a result, a higher average for that age.

We do not want to publish anything that cannot stand the test of time and reason.

What does the recommendation of an association like this amount to unless we can show what we are talking about. It is of no use for us to undertake to construct a standard from the measurements already accumulated, for if you are going to base a system of physical training upon these, you must have an immense number of measurements.

I shall, at some future time, get out a chart, showing a man just where he stands compared to a typical man.

I am very sorry that Dr. Hitchcock has misunderstood that first chart, and if he, or any one else who does not thoroughly understand it, will come to me, I will be only too glad to give them a thorough explanation of it.

We can hope but little from publications of experts, who fail to grasp the most easily explained principles.

There are quite a number of points in Dr. Hitchcock's paper which I should like to answer, but I hardly care to take up your time now.

Dr. Hitchcock (of Amherst):—If this paper has done nothing else it has opened Dr. Sargent's mouth, and if he will give a lecture on the subject, I will come and hear it, if it takes half the farm to bring me.

I must draw the line with Dr. Sargent in regard to publication. In the little manual I have issued I have merely put my results down on paper, so that other men will have my mistakes, at least, to work upon. All great works come from little things, added here and there, and I want to add my mite to this great work. I hope Dr. Sargent will live forty years, and give us the results of his work, but I want something now. Let each one of us work on, and do what we can to help this great work along.

Dr. Hitchcock (of Cornell):—All I have to say in answer to Dr. Sargent is that one hope I had in preparing the paper was that Dr. Sargent would rise and give us some explanation of his chart, and, if he will, some time give us what the typical man is.

Dr. Blaikie:—I do not understand that Dr. Sargent does not want us to keep from looking at his chart simply because his chart is not finished, but he wants us to look at it as an unfinished work.

I am glad that Dr. Sargent has met with some of the same difficulties that I have met with, and I am sure that he can always improve by discussion and work on this subject.

MILITARY TRAINING AS AN EXERCISE.

J. W. Seaver.—*Gentlemen*:—In preparing this paper I have had two ideas in view: one was, to inquire what an exercise should be, and the other, what it should do, and along with this whether the military drill fills the bill; and here let me say that I have tried not to trench on other papers on this subject.

I may say that the primary idea of exercise is to develop the organs of the body by exercise, so as to develop their functional capacity. Now, whatever technical definition we may employ here, the means towards this end are various; but all have in common the physiological and natural adaptation of the part to meet the work put upon it. It is the result of thousands of tentative efforts that has finally produced the artist in his peculiar line of work. The proper balancing of parts, so as to give the greatest physical build, will give us the typical man. Physical improvement is not limited to any age.

The development is brought about, if in no other way, by that of continuous use of the organs. Differences of system may be sources of unbounded good. In recent years schools with different systems of exercise have been established among other schools on the military system; they have introduced no new methods of education; it is simply one form of exercise. In beginning I premised that the leading idea of exercise is development.

Nature seems to have ordained our lives so that as boys we run and are never quiet; every muscle of the body is brought into play a thousand times a day; in short, we are boys; in mature manhood a vast change has come over us; we walk steadily to our duties; but our perplexing and devious ways do not cause us to jump and run as when we were boys. Exercises that would be pleasant to the boy would be annoying to the man. And first I say the element of sport or pleasure must enter largely into the exercise.

In the choice of an exercise the developement of the nerve centres must not be forgotten; we must include nerve training as well as muscular training; nor is simply development of the mind what is meant here, for we may find mental development in persons whose peripheral nerves are all out of tune. In physical development the extent to which the muscular development is dependent on nerve excitement is not taken into account; and yet, in a game of foot-ball, for instance, the player heeds not the bumps, bruises, and scratches; but his muscles are being developed and his nervous centres also without his knowledge. He enters into the game from the love of the sport which it gives him, and expends an amount of energy which would completely exhaust him, did not this element of sport enter into the exercise.

These are the men who make the graceful, successful men in life; these men who have gained strength and energy while engaged in sport, and what we urge is that this element of sport must enter into the recreations of older persons. I think we can hardly introduce too much physical education into our youth.

The element of companionship is another point that must not be overlooked in exercises.

I deem this element of companionship so important that I advise students never even to go out for a walk without taking a companion.

A proper course for physical education must begin with simple movements and lead up to more complex.

In this particular the military drill signally fails.

In this, also, is wanting the looking forward to prizes to be won, and the excitement of competition. It is this feeling that makes us continue in our exercise when we measure ourselves with others and find where we are weak and fortify ourselves, and find where others are weak and overcome them. The success, however, that the military method has had in some places entitles it to consideration, and the work which it entails on the student seems to act as a safety-valve; for in college there are men in every class who seem to require some outlet for their animal spirits, and the military drill and other systems of physical education have brought about a greater degree of submission to college rules.

Any instructor who has kept track of college students cannot fail to be struck with the increasing regard of the students for college authority.

The idea of teaching men to manage themselves is becoming popular and is decidely American.

To make military drill popular with boys you must decidedly restrict their other out-door sports. Military drill may increase obedience to orders and so on, and this is good, but it is not conducive to great physical development; while in foot-ball and free out-door games the boy gains wonderfully in physical development, and he will never fail in foot-ball to be obedient to orders. I have thus far spoken of exercises for youth; it remains for me to speak of military drill in its effects on the physical system of the adult.

I consider that it is only applicable to adult life, and it is a most admirable exercise for the adult.

The weight carried may vary from eight to eighteen pounds. The out-door work is generally unsatisfactory; the march is apt to be long and tiresome, especially to men unaccustomed to such exercise.

The military drill, then, is largely made up of movements which are most suitable to adults; it stimulates to an erect carriage, and, as there is no excitement, it has consequently no danger of over-stimulation. The time of work is more generally suited to adult life, but for the healthy man the simple drill of camp life is not sufficient; and in the best military systems the drill is supplemented by other exercises, gymnastic exercises, and during the whole term of service free and weapon exercises ought to be pursued for the soldier's health.

It seems to me that for developing a youth into a vigorous, ruddy, healthy man, we have a better method than the military. At the West Point Military Academy the men have no tobacco or stimulants, and yet fifty-five per cent. fail to keep on with the class.

The system fails for the youth, and it is satisfactory for the mature.

DISCUSSION ON PROF. SEAVER'S PAPER.

General Molineaux:—Mr. President and ladies and gentlemen, I am not accustomed to speaking to such learned assemblies, but there is one point which I wish to bring to your attention, and it is simply this: I believe everything that has been said here to-day in regard to the success that has attended your endeavors, but I would like to see such great leaders in gymnastics widen the influence of their sphere. I would like to see the masses educated; I would like to see my boys in the public schools get the same training that they would get if I can send them to college; but this I do not think you can do unless we have the military training there. I want to see the public schools be able to do for us what the Turnerbund did for the United States Army in 1861–2.

In this age of rapid transit we have not the same incentive for physical culture that they formerly had. You have had wonderful training in your colleges, but I want to see them go out from their colleges and teach the people. From a soldiers' standpoint, it is necessary to take a broader view of military training than to view it as an exercise. We must have it as a means of mental culture, as well as physical development. Did we possess an Aladdin's lamp, we might spring at once into full development; but in this matter-of-fact age we must content ourselves with a more gradual development.

What has been done for the physical development of the masses by our great institutions of learning? I answer—"Little or nothing."

This is, however, the fault of the system, or, rather, want of system. The problem, then, is this substantially—how can we give physical culture to the greatest number at the least expense of time?

This, I think, can only be done by military training.

In this military training there is complete subjection of mind and will to one person, and thus prompt obedience becomes a habit.

As it is now at public gymnasiums, the small and feeble boys are crowded out of their places by the more robust. Military exercise, according to Dr. Seaver, is objectionable. Is the training which the military tactics demands essentially different from that which science prescribes?

In the mind the reasoning faculties are developed step by step in our colleges by speaking the mind of the student to the professor. I fear some are frightened by the term military training, and if you see objectionable features in the exercises drop them; throw aside the military terms companies, battalions, colonels, captains, and call them instead, sections, monitors, teachers, and so forth; divide your school into classes according to the strength and muscle. As in the school for mental training, proficiency in deportment should be rewarded by promotion.

I would have the physical exercise of the school treated as a study, a special orderly drill.

By the military method the teacher can instantly detect any disorderly or irregular movement.

The run, the jump, can be practiced in ranks.

The benefits which military training gives are the habit of implicit obedience, the progressive training of the body, and its consequent development, the massing and moving of large bodies in limited spaces, cleanliness and endurance of physical hardness.

Whatever you wish to give to the life of a nation, you must put in its schools. Can you afford to put aside the military method by which you increase the health and physical condition of your children, while increasing their capacity for usefulness to their country a thousand-fold?

War is to be dreaded, but the effects of war are more to be dreaded by the untrained soldier.

You cannot ignore the needs of the country in the event of war, and in time of peace is the time to prepare for war, and a pressing want of the day is thorough and competent teachers of physical culture, that our children may grow up strong and healthy, able to endure.

If we examine the statistics of our late war, and contrast the deaths from exposure and fatigue with those of the Prussian army, we cannot help feeling that there is something radically wrong in our system of education and training of our youth.

Any system of education fails unless it trains the mind to self-reliance. We have the self-reliance, but we want an orderly system of training in masses.

Colleges may turn out occasional individuals who beat the record, but we want this in the masses, not in a small percentage of the young. I still see that the day is far distant when our institutions will cease to be jeopardised by war, therefore let us be prepared.

The cause of education in this country is in your hands; deliberate wisely; examine well the military system; insist upon more obedience and discipline in the gymnasium.

I would not take one moment from the boyish sports, but I would make it compulsory, and I would make it interesting, either by the gymnasium or by some means through the military drill.

You cannot forget that you are a Republic, and you must take the young man sports, and through them make him a bulwark for the country, if need should come.

Dr. J. S. White:—Prof. Seaver says that in military exercises the element of fun is wanting. My experience goes to show that that element is one of the greatest attractions of it, and the only thing against it, in my mind, is that it tends to bring about an unequal development of the two sides of the body.

For boys, and we might also say girls, no variety of exercise gives such good results.

There are several points in which Upton's Tactics is deficient, and several of the positions taken, carrying arms, for example, are unphysiological.

The support arms is dangerous, also the "right shoulder arms," and in using these commands considerable time is lost, as, for example, let us suppose a regiment in the field held in reserve and the order is given to advance, these would be the commands: "battalion attention; carry arms; right shoulder arms; forward, double time, march," thus resulting in a loss of several seconds, while in other tactics the command would be "forward, double time, march," the piece would be carried at a "trail arms," and at a halt the piece is brought to an "order arms."

If we change the tactics slightly for the purpose of exercise, physical development can be most perfectly brought out and the quickness and attention developed in the subject is one of the greatest advantages in military drill. In military drill an order is given quickly with no opportunity for repetition, and therefore demands the closest attention on the part of the company. The success of an army requires the instantaneous perception of the order, and this proficiency in receiving the order must be secured by every member of the organization.

Some seem to take the ground that calisthenics and the military drill are opposed to each other, but it is by no means necessary that these two systems should be adopted, one to the exclusion of the other. In the drill, muskets, for boys under fifteen, should weigh from two to three pounds.

The military drill attains its greatest efficiency when the master of the school gives the orders. It is somewhat amusing to see how many points of the drill are adopted by the opponents of the drill in their calisthenics.

The part which the military drill plays of promoting obedience is one of the best things in the moral education of the young which can scarcely be overestimated.

DR. LIVINGSTON:—I came here as one of the committee of the Massachusetts Medical Society to discover some method of physical education for the public schools In Boston, when we ask for physical education in the public schools, we are told we have the military drill; what more do you want? but, in the first place, what does military drill testify of itself?

When I look in Upton's Tactics, he says the movements in the tactics are confined principally to the movements required in war, and he acknowledges that the military drill is not all that is desirable for physical culture; therefore he sets a great deal by the setting up drill, but this is generally gone through with in a very slighting manner.

The military drill was brought forward in 1863 as a war movement and it is now advocated as a means of physical culture. In the manual of arms twelve out of the sixteen movements are executed on the right side of the body, four on the left side. At least three-quarters of all the work is done on the right side of the body.

My attention was called to this by a patient, a young lad who was given an eight-pound musket when he was thirteen years old to carry, and this he carried for two years, when a decided curvature of the spine resulted. For small boys seven and three-quarters pound muskets are used.

Then again in the uniform there is considerable restriction of the chest and also of the muscles of the body.

What Dr. White said of the moral effect of the military drill is very admirable, and if you have a system of military drill with the light musket and the elimination of the one sided movements then I see no harm in the drill.

DR. SEAVER:—I see no difference between the military drill and the gymnastic drill. The mass movements are obtained just the same, the discipline is the same, and we gradute the drill to the strength of the pupil and to the age. .

MR. KEELER (of West Point):—I am opposed to the military exercise as exercise, and I do not think it is right for a child to handle a musket; instead, give the child the apparatus in the gymnasium.

DR. SEAVER spoke of failures at West Point from physical disability, but the percentage he gives is too high, for in three years out of six hundred men only five were sent home for physical disability.

In further discussion of Dr. Seaver's paper, Dr. Sargent was opposed to the military drill on account of the one sided movements, and the restrictions it placed upon the free movements of the body.

COLONEL MASON was in favor of it, not only as an exercise, but chiefly on patriotic grounds.

Under the head of miscellaneous business, the system of proposed measurements were referred to the committee with power to receive suggestions and add any new measurements that might be found useful.

The meeting then adjourned to meet at the Berkely Lyceum, 19 and 21 West 44th Street, New York, on the day following Thanksgiving, in 1888.

SANITARY CONFERENCE IN PERU.

Surgeon General Hamilton or Surgeon Stoner, of the Marine Hospital Service, will shortly be sent to Peru as a delegate to the sanitary conference to be held at Lima.

AMERICAN PUBLIC HEALTH ASSOCIATION.

(Continued from page 474, December issue.)

HON. J. W. CLAPP spoke as follows: Mr. President and Gentlemen of the American Public Health Association.—The chief executive officer of our municipal government, being, much to his regret and my own, unable to be present on this occasion, the duty of extending to you a welcome as the guests of our city, has, as you have just been informed, at his request and that of the committee of arrangements, devolved upon myself, and it is one that I discharge with the greatest pleasure, as I am not wholly unacquainted with the history, purposes and influence of this association. A somewhat irregular membership and attendance upon its meetings enables me to testify that it is composed in the main of earnest, practical, philanthropic and learned men, some of whom are lights of the medical profession, and others who have made sanitary science a matter of long and thorough study. Annually, for the last sixteen years, has the association assembled and given to the country and the cause of humanity the time and services of its members and the rich benefits of its labors without fee or reward, except that which the generous heart experiences from the exercise of the noblest qualities of our nature. Such an organization is certainly entitled to the profoundest respect and admiration of all, and nowhere should those who compose it receive a warmer recognition or more hospitable reception than in the city where you are now assembled; and in proof of this, instead of indulging in remarks as to the importance of sanitary science in the abstract as a beneficent instrumentality for relieving, or, what is infinitely better, preventing, the physical ills that afflict society, and thus contributing to the sum of human happiness and the average duration of life, I can better meet the purposes of the occasion by a brief reference to the experience of Memphis within the last few years. When this association held its annual meeting in Nashville in November, 1879, for two successive years had Memphis been desolated by the dreadful scourge of yellow fever, and so desperate and hopeless did its condition appear, that in one instance, at least, the heartless and incendiary suggestion was offered that the flames be made to consume what the pestilence had spared, and thus, in one huge holocaust, Memphis, like its prototype upon the Nile, should become a thing of the past. Along with Drs. Porter and Thornton, whose names, without disparagement to others, are deserving of special mention in connection with the sanitary redemption of Memphis and her present prosperity, I attended the meeting referred to, and after an address from a prominent member of the association, meant, we will suppose, in kindness, but in which our people were represented as steeped in filth and criminally negligent of the most ordinary precautions, I addressed the association in vindication and exoneration of our city and its stricken inhabitants, maintaining that we did not occupy the position of culprits or beggars for public charity, but were unfortunate rather than blamable, and that the two gentlemen named, and myself, were in attendance upon the association with a view to learn the source of the calamities that had befallen us, and how to apply the remedy, and the assurance was given that when this information, of a reliable character, was obtained, prostrated and impoverished as we were, our people were heroic enough, by the help of God, to struggle through our labyrinth of trouble, and our city should be no longer a byword and term of reproach. For the attainment of our object, we desired that the association should appoint, or recommend, a committee competent to investigate our situation and advise us as to the measures of relief proper to be adopted. This request was, with a kindly expression of sympathy, complied with by the association, and just there was the turning point in our history.

And now, Mr. President and gentlemen of the association, gratefully remembering your considerate feeling and action in the hour of our sorest need, we greet your presence here with unfeigned pleasure, and with warrantable pride and satfaction invite you to contrast the melancholy wreck of 1879 with the busy, prosperous, and in some respects model city that now joyfully hails you as its honored guests. Then it was upon the verge of bankruptcy and financial ruin; now its indebtedness has all been provided for, and its credit is above par. Then nine miles of decaying wooden pavement filled its streets; now we can exhibit in its stead twenty-five miles of substantial stone and gravel. Then there were within the city limits four miles of private and defective sewerage; now the vaults that perforated our soil have all been filled, and there are forty-five miles of sewerage unexcelled in quality belonging to the corporation, with corresponding sub-soil drain tiles. Then there were some ten or twelve miles of horse car street railway; now there are thirty-five miles of the same kind, and, in addition thereto, thirteen miles operated by steam. Then it was the terminus of four lines of trunk railways; now, the converging point of more than double that number, radiating to every point of the compass, with several others in process of construction, and to accommodate the traffic of these grand arteries of commerce a viaduct across the mighty river that forms our western boundary is an assured event of the early future. Then the value of our annual wholesale and jobbing trade was less than seventy millions of dollars, and the aggregate annual receipts of cotton less than 400,000 bales; now the same character of trade for the last commercial year aggregates $160,000,000, and the receipts of cotton were upward of 660,000, and for the current year will be between 700,000 and 1,000,000 bales, constituting Memphis the largest inland cotton market in the world, and third only, if not second, to any southern seaport. Then, with a population reduced by death and removal, to less than 34,000, as appears from the United States census; now, with a marvelous increase to 75,000. Then, a normal death rate of thirty-five per thousand; now, of the resident population, nine per thousand of white, and twenty-six of the colored.

These remarks might, I am well aware, be deemed out of place and in bad taste before any other audience of strangers than this; but addressing as I do an association that in a special manner represents the sanitary interests and physical welfare of the whole country and all its parts, it will not, I am sure, be deemed irrelevant or uninteresting to refer with some particularity to so notable an illustration as this city affords of the practical value of sanitary science when its principles are intelligently and earnestly applied. Here is a great and growing city whose vital statistics now challenge comparison with those of any other in the Mississippi valley, that less than a decade ago was generally regarded as a pestilential hotbed, whose doom was irrevocably fixed and whose very existence was considered as a menace to the general welfare, and surely it cannot fail to interest this enlightened and philanthropic assemblage to learn that this doom was averted, and their city placed upon the highway to prosperity by the indomitable energy and unsparing self sacrifice of its citizens, who, when overwhelmed with affliction and stinted in the very means of living, expended more than a million of dollars in local sanitation; and while, with grateful hearts, we recognize the benificent hand of Him who holds the scales of destiny, yet, if we refer to our trials and our triumphs with something of self glorification, we feel assured that the weakness will, at least by this association, be deemed a pardonable one.

And now, Mr. President and gentlemen of the association, it only remains for me, on behalf of the city of Memphis and all of her citizens, to reiterate the assurance of our sympathy and very high regard, and bid your association an earnest God speed in its benign and noble mission, and if you shall find our sources of entertainment limited, we can only regret that they are not as ample as the room we make for you in our hearts.

Gov. Taylor was then introduced by Dr. Thornton, to tender to the association welcome on behalf of the people of the State.

Then followed the address of the President, Dr. George M. Sternberg, U. S. A., an abstract of which will appear in our next issue.

The following resolution was introduced and adopted:

"Resolved, That a committee of five, of which the president of the association shall be chairman, be appointed to study experimentally the methods and effects of protective inoculations against infectious diseases."

The following resolutions, introduced by Dr. Otterson, of Brooklyn, were referred to the executive committee:

"That this association urge its membership to recommend their representatives in Congress to further, by all means in their power, additional appropriations for the maintenance and equipment of the United States quarantine stations at Delaware Breakwater, Cape Charles and the Gulf of Mexico, and that legislation providing a penalty for the violation of the United States quarantine is, in our opinion, an urgent necessity."

"Be it resolved, further, That the surgeon-general of the Marine hospital service be requested to cause the detail of an aditional officer to serve in the bureau to act as register of vital statistics, and that such statistics be made part of the weekly abstracts."

The next paper to be read, according to program, was that by Dr. Carl H. Horsch, of Dover, N. H., on "The Necessity of the Inspection of Animals Required for Food." Dr. Horsch, not being present, the paper was read by Dr. Geo. H. Rohe, of the Johns Hopkins University of Baltimore. Dr. Rohe is an excellent and distinct reader, and the paper was listened to with marked interest throughout its great length. The paper cited the laws of Moses regarding the killing of animals. The deleterious effects arising from eating meat of animals which had not been properly slaughtered, and which were evidently diseased, was commented upon at length. The paper concluded by recommending that proper and competent persons should be appointed to inspect animals before they were slaughtered, and that a close examination of the internal organs be made afterward.

Dr. Azel Ames, of Chicago, read a very interesting and instructive paper on "The Meat Food Supply of the Nation." It was quite lengthy, and treated the subject most fully. In it he says: "Closely related to the welfare of the nation, and to its food products lie the questions of their

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export trade and transportation traffic, through which much of our wealth and attendant advantages are assured. They are not easily divorced, and add dignity and importance to the subject. No reliable census of the animal wealth of the country has ever been taken, but, however great it may have been, it has been seriously decreased in the past two years by terrible inroads of disease and losses of the herds of the southwest and northwest, from severe droughts and winter hardships. Almost unconsciously, but nevertheless with great rapidity, we are approaching those conditions as between population and food supply, which are the chief anxieties of European nations. The problems of the old world are fast becoming ours. So rapid has been the advance of our population, and so great the losses to our herds, that there are to-day, undoubtedly, less than 700 head to the 1,000 of population as compared with 814 head in 1860. We consume to-day 150 pounds of meat per capita against 111 pounds in 1860; and in Great Britain it has increased from 77 pounds per capita to 109 pounds since 1860. America makes good to-day the deficiency of the meat supply of Western Europe by an astonishing total of 800,000 tons. It is evident that our meat supply is rapidly diminishing from these natural causes, viz.: The enormous increase of population and its consumption, the diminishing grazing area, and the increased cost of production. But, aside from these national influences, two that are distinctly abnormal, threaten and depress the industries which produce flesh food: the first is disease, and the second is the old and new enactment of Congress and State legislatures. Pleuro-pneumonia, which is merely exotic in its character, has in the past five years inflicted a direct loss on the country of between $20,000,000 and $30,000,000. The consolidated cattle association has made steadfast war on the disease, and, with the assistance of this association, the bureau of animal industry has secured from Congress much help in its aid. They have urged the appointment of a commissioner by the President, and appropriations from Congress to enable him to get at the prime causes of this dread disease, and to provide means for its eradication. It is the duty of the national government to take this matter in hand, for it virtually interests the whole people, and the next general census should include full and complete data on the subject."

(TO BE CONCLUDED.)

BACILLI IN HUDSON RIVER ICE.

The *Sun* devotes a double-leaded editorial (says the *Med. Record*) and a column of its valuable space to calling attention to the presence of bacilli in Hudson River ice. The investigations of Dr. Prudden, as published in the *Med. Record*, are quoted. There seems little doubt that the melted ice from the Hudson, chiefly used in this city, contains an unusual proportion of living bacilli. But while a few of these may at some time do harm, it does not seem that they have as yet established a very bad record. The great ice-drinking season in this city is in June, July, and August, but the typhoid-fever season does not begin until later, and is then very often imported from the country. The excess of diarrhœa in summer can hardly be attributed to the ice-water, for it occurs among infants and the poorer classes who do not indulge much in the luxury of iced drinks. On the whole, therefore, the Hudson River ice bacilli cannot be charged with having as yet done any great harm.

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Editorial.

SUED FOR LIBEL.

The Annals of Hygiene has been sued for libel by The Hygeia Sparkling Distilled Water Company, of New York City. The suit grows out of the publication in our December issue, wherein we demonstrated that the water which this company places upon the market does not, upon analysis, prove to be the same as that which they claim in their published analysis in the *Medical Record.* Commenting on this suit, the Philadelphia *Press*, of December 19th, editorially says:

"The State Board of Health, and its organ, The Annals of Hygiene, a periodical to which we have more than once drawn favorable attention, have met the not unusual reward of those who publish the results of analysis of articles placed on public sale—a suit for libel. The suit, brought by the owners and venders of the Hygeia water, whose purity is assailed by the results of chemical analysis published in the Annals, entitles them to a suspension of judgment. But it is pertinent to point out that a State Board of Health has no more important duty than the protection of the general public from adulterated food and drink. Specific nuisances often work their own abatement, and epidemics breed an alarm which stimulates precaution, but the daily consumption of doubtful, deleterious or adulterated articles is an evil against which the public has no remedy, except in the vigilance of public journals and Boards of Health. The field is a broad one, and it has in general no more important field for useful work than in the examinations of articles sold to those who are seeking to protect their health or to restore it."

As the *Press* very truly says, the Hygeia company is entitled to a suspension of judgment, but a word of explanation of our position is in order.

Section V. of the Act of the Legislature of Pennsylvania, creating the State Board of Health, reads as follows:

"The State Board of Health and Vital Statistics shall have the general supervision of the interests of the health and lives of the citizens of the Commonwealth, and shall especially study its vital statistics. It shall make *sanitary investigations* and *inquiries* respecting the causes of disease, and especially of epidemic diseases, including those of domestic animals, the sources of mortality, and the *effects* of localities, employments, conditions, habits, food, *beverages* and medicine *on the health of the people. It shall also disseminate information upon these and similar subjects among the people.* It shall, when required by the Governor or Legislature, and at such other times as it deems it important, institute sanitary inspections of public institutions or places throughout the State. It shall codify and suggest amendments to the sanitary laws of the Commonwealth, and shall have power to enforce such regulations as will tend to limit the progress of epidemic diseases."

Realizing that it is a very common practice for manufacturers and vendors of articles intended for the use and consumption of man to offer them that which is injurious to health, and to make false representations that they may sell their goods, we decided that we would best fulfill the instructions of the legislature by instituting a series of investigations (honestly, fairly, impartially, but fearlessly conducted) into the composition and purity of all such articles, and to *disseminate information* so procured *among the people.* We felt that we were, in reality, actually directed by the legislature to do just that which we have done. With malice towards none; with the firm determination to honestly and conscientiously enlighten the people, we set to work. We have so far published several of these reports, and now, in the discharge of this great trust imposed upon us by the legislature, we find ourselves confronted with a suit for libel, instituted by a party whose goods would not stand the searching light of truth we turned upon them.

The report on Hygeia Water was, prior to publication, submitted to a meeting of the State Board of Health of Pennsylvania and, it was, by this Board, unanimously ordered to be published as read. We knew nothing of this company (and, at the present writing, know no more), save that they were extensively advertising this water. We had, and could have had, no malice nor motive for deprecating their water (it would have been much more pleasent to have spoken in its favor); but we were actuated solely by an honest and unselfish desire to discover and tell the truth. We have now in course of preparation a number of analytical examinations which will be published from month to month, libel suits to the contrary notwithstanding. While we. extremely regret the necessity of saying anything unpleasant about any person, yet we will not allow persuasion, coercion, threat or even suit to swerve us from our determined purpose of furnishing the people with the truth, the whole truth, and nothing but the truth about all articles that are offered for their use or consumption. We feel confidently sure of the sympathy and encouragement of all right-thinking persons, and we will continue to publish these valuable reports, one of which will be found in our next issue.

Notes and Comments.

NEW YORK QUARANTINE.

Mr. David W. Judd, State Quarantine Commissioner for fifteen years, presents in the *American Agriculturist* for December, a detailed history of the Quarantine Establishment at New York for one hundred years. It will be read with special interest at this time when cholera has threatened the country. Mr. Judd writes: What is known as the New York Quarantine Establishment is located down the Bay, ten miles from the city, near to Fort Lafayette, between Staten Island and Coney Island, just in and below "the Narrows."

It comprises, first in importance, Swinburne Island, on which the hospital wards are located.

Second in importance, Hoffman Island, on which well passengers are detained.

Third, the quarantine anchorage grounds including the Detention or Hospital Ship Illinois, now temporarily disabled.

Fourth, the residences of the health officer and deputies, located on Staten Island, just above the Narrows.

Fifth, the boarding steamers for conveying passengers to and from incoming ships.

Sixth, the quarantine burying ground at Seguine's Point.

SWINBURNE ISLAND.

Swinburne Island, completed and opened for hospital purposes in 1870, covers an area at its base of three acres, and gradually sloping inward shows a surface above high water mark of two acres. It was made by placing cribs of stone and sand filled one above another and surrounded by riprap of very heavy stones, which protects it from the action of the sea. The hospital buildings proper are divided into wards eighty-nine feet long, twenty-four feet wide, and twelve feet high, capable of accommodating in all over five hundred patients at a time. The wards are very roomy and provide for a perpetual currant of air, so often lacking in hospitals. Indeed, this island is so healthful and invigorating that during the time I have been commissioner (some fifteen years), I cannot recall that we have lost any nurse, hospital attendant, or other employee on the island from contact with cholera, yellow fever, or any other diseases brought to the island by the patients.

On the seaward end of the island facing Sandy Hook is the residence of the Superintendent of Quarantine. It is one story higher than the hospitals or wards, and comprises about eight rooms. Here the Superintendent lives with his family, and he is required to be in constant attendance during the active quarantine season, when incoming vessels with sickness are expected. All of the wards for the patients and sleeping apartments of the nurses and employees are connected with the Superintendent's residence, by means of a corridor nine feet wide and running the entire length of the hospital wards.

HOFFMAN ISLAND.

The work on the foundations of Hoffman Island were commenced in 1869, and completed at an expenditure of about two hundred and seventy thousand dollars, that is without the buildings. It was made of crib work, the same as Swinburne island. The original plan was to build six one-story brick buildings upon the Island capable of holding four thousand people. The plans, however, were changed so that three large story-and-a-half brick buildings were constructed. These buildings are very large and spacious, containing all the necessary appurtenances for cleansing passengers, and disinfecting clothing. Here those who are believed to have been dangerously exposed to cholera or other diseases, are retained for some time separate from the other passengers.

THE QUARANTINE ANCHORAGE.

The Quarantine anchorage grounds are below Swinburne Island toward Sandy Hook. The steamer Illinois, loaned temporarily by the United States War Department in 1863 and permanently in 1870 to the Quarantine Commissioners, is by law required to be moored here from the 1st of May until the 1st of November, as a residence for officers whose duty it is to board vessels from infected ports, also as a ship for observations. In the winter time she is brought to Staten Island and moored.

THE WORKINGS OF QUARANTINE.

All vessals arriving from the West Indies, South American ports, and from the west coast of Africa, are required to come to anchor in the Lower Bay. All other vessels come up to the Narrows, opposite the health officer's residence, and are boarded in a steam tug or in small boats by the health officer's deputies. The object of boarding from two points, that is, the Upper and Lower Bay, is to keep all vessels coming from infected ports, or likely to be infected with cholera or yellow fever, as far away from the city as possible. When a vessel arrives with cholera on board, or during whose voyage any cholera cases have occurred, the passengers are immediately taken off and sent to Hoffman Island. Then, as the disease manifests itself, the patients are transferred to the wards on Swinburne Island. After the passengers are taken from the vessel, she is thoroughly fumigated and disinfected, and allowed to proceed to the city whenever the health officers and commissioners are satisfied that she can do so with safety.

LONGEVITY.

The town of West Chester, Chester county, Pennsylvania, has within its borders a large population of Friends and of negroes. Careful records have been kept at the grounds where these people are buried, and the books show that while the average age of the Friends is 55 years, for the colored people it is but 17 years. Commenting on this remarkable showing, the *Daily Local News* says:

"Hon. Washington Townsend has kindly shown us a comparative table, prepared for the use of the insurance companies of Philadelphia, and showing the comparative length of life of members of the Society of Friends and the rest of the population of Philadelphia. The tables were prepared by Phiny E. Chase, A.M., under the direction of the Provident Life and Trust Company. The Philadelphia table is based upon records of 425,502 interments, 265,590 births and seven successive decennial census enumerations; the Friends' table upon records of 14,666 interments, 4264 births and eight enumerations. These tables show that the average length of life, or the expectancy of life, of the Society of Friends in Philadelphia is at their birth 43.73 years; while for the rest of the population of the city it is only 35.09, or a difference of over eight years, while, according to the Carlisle tables, the average should be 38.72. The average for Philadelphia's entire population is nearly as much below the Carlisle tables as the Friends are above it. The number of infants dying during the first year is so much less among the Friends as to give them an advantage of 44.70 per cent. The average proportionate mortality between the ages of 20 and 60 years is, annually, among Friends, 14.25; among others, 17.58, giving a difference in favor of the Friends of 20.49 per cent. The smallest proportionate mortality occurs in both classes at the age of twelve years, when, among Friends, it is 3.22 per thousand, and among the general population, 3.88 per thousand. This is known as the age of the greatest vitality. The chances that any child in average health at 12 years of age will die before it attains its thirteenth birthday is less than four in one thousand. If this degree if vitality could be retained, and nothing occur to accelerate the death rate, the last man in a thousand persons, taken promiscuously, would die at the age of 257¾ years, while the last among a thousand Friends would die at the age of 310½ years. It follows, then, that life is cut short by the manner of spending it, all persons being more or less at fault. There are many things outside of personal habits, such as climatic influences, risks of accident, which are greater to those over than under 12 years of age. These are, to a certain extent, unavoidable under the present order of things. But more than any other cause of shortened life are the violations of nature's simplest laws, which are daily and habitual with all men. The Friends, with their quiet, peaceful habits of life and avoidance of excitement, eliminate one very fruitful element of mortality."

STREET EXCAVATIONS.

At a recent meeting of the Section of Hygiene of the Academy of Medicine of New York (says *Building*), Dr. Stephen Smith advocated the continuance of excavations during the winter months, recommending that no permits be granted during the warm months, namely, from June 1 to October 1. Dr. Smith offered the following resolution:

Whereas, It is a well established fact that street excavations in this city during the warm months of the year affect most unfavorably the public health, causing serious outbreaks of malarial, intestinal, and other allied affections, owing to the emanation of deleterious gases from sources of filth and foul air hitherto covered, and the exposure of long buried soils to the putrefactive changes which heat and sun induce.

Resolved, That, in the opinion of the Section on Hygiene of the Academy of Medicine, the interests of the public health of this city require that street excavations should be permitted only during the months from October 1 to June 1, inclusive, and should be forbidden, and all existing excavations closed and paved, from June 1 to October 1, inclusive.

Before closing, the section appointed a committee with power to bring the subject before the proper officers. It would seem as if this action, taken by men of so much authority on a question of public health, must have large influence with the Commissioner of Public Works. And we learn that under certain conditions work will be permitted on the subways and other street openings. The following circular has been issued by the Department of Public Works:

"During the winter months, in the absence of heavy frosts, the streets may be opened for laying pipe and other purposes. The openings must be so regulated that they can be closed within twenty-four hours. The chief inspector, W. J. Haskins, civil engineer, is charged with the duty of enforcing the necessary precautions. Application can be made at once to this department for opening streets during the winter period. All outstanding permits at this date are hereby recalled and declared revoked, and must be turned in to the chief inspector. The police have been notified not to recognize any permits unless issued on this or subsequent dates."

This allows of any work being done that does not jeopardize the freezing of gas and water pipes, a serious danger where excavations of any depth are necessary.

THE POISONED CHALICE.

Dr. M. O. Terry, in the *Physician's and Surgeon's Investigator*, makes the following remarks in regard to the mode of administering the wine at the communion table: "At the communion table the church calls for the saint as well as the sinner (of the past), and each bows and partakes of the same cup and for the same purpose. The pure in mind and body sips from the cup which has just left the lips of one physically impure. In one is an incurable disease. The whole system is a wreck! The pure and healthy child takes the cup from the unfortunate child of heredity, the offspring of physical impurity. Shall I say what diseases may be communicated in this manner? There are many, and any one of them has yet to be treated successfully or to be thoroughly understood by the medical men of this generation. Now I say to the church, is it just to humanity to administer a rite which is given as a symbol for purification, in such a manner that the process of giving it endangers or contaminates the innocent child as well as the aged parent? It is said that cleanliness is next to Godliness. If this be true, ought not the church to revise her methods in this particular?" The Roman Catholic Church has long ago answered Dr. Terry's question. In that church the cup is never presented to the communicant, but only the wafer, and yet in no church organization in the world is the Lord's Supper looked upon as so sacred or has so deep a significance. For reasons such as Dr. Terry has presented, as well as others, the cup is only partaken of by the priest, and it certainly would detract nothing from the sacrament if this practice would be followed by the whole Christian church in all its organizations.

CONSUMPTION AND THE HOUSE FLY.

The mosquito's share in the economy of nature (says the *Medical Record*) has always remained a mystery, except that it seems to bring out an interesting cutaneous eruption, and reduce the price of board in certain districts of New Jersey. The house-fly, however, has been credited with some general usefulness as a scavenger. This important function, if it really exists, is offset by facts now accumulating which show that the fly is, at times, a carrier of contagion.

MM. Spillmann and Haushalter, in particular, have recently shown at the Académie des Sciences, the important rôle which the house fly may play in the dissemination of tuberculosis. The intestines of flies that have fed on phthisical sputum, and the excrata of these insects, are found to contain the bacilli of tuberculosis. Flies that have fed on such infected matter may deposit the bacilli on windows, tables, food, and, indeed, may spread potential infection everywhere throughout an apartment. When the fly dies, its body desiccates, setting the bacilli free and still capable of growth. The house-fly has thus an immortal part in the shape of pernicious microbes.

The idea that this insect may carry contagion is not a new one. The contagious ophthalmia of Egypt has been believed to be spread largely through the flies. Bacteriologists have noticed how readily cultures may become infected by flies, and Koch admits that these insects may be the vehicles for the distribution of cholera. Yellow fever has been spread, it is thought, by mosquitos and perhaps, also, by flies.

Facts are accumulating to show that the fly may be not only an annoying but a dangerous factor in a house-hold.

HOW MUCH A MAN EATS.

Richard A. Proctor, in the October *Cosmopolitan*, says: It has been calculated that, on the average, each man who attains the age of three score and ten consumes during the course of his life twenty wagon loads of food, solid and liquid. At four tons to the wagon, this would correspond to an average of about a hundred ounces of food per day, or say some one hundred and twenty ounces per day during adult life and about eighty ounces during infancy and youth. Most modern doctors agree in regarding one hundred and twenty ounces of food per day, corresponding to five or six half-pints of liquid food, and seven or eight pounds of solid food, as in excess of the real daily requirements of a healthy man or woman.

Yet probably most of us take more than this, in one way or another, during the day. Dr. Lankester, from an extensive analysis of the dietary of soldiers, sailors, prisoners, and the better paid classes of artisans and professional men in London, found the average daily quantity of solid and liquid food to be one hundred and forty-three ounces. Doubtless many take much less; but unquestionably many take much more than this. When some one mentioned before Sydney Smith the twenty wagon loads of food calculated for each man's allowance, he turned to Lord Durham, who like himself was corpulent (and not without sufficient reason), with the quaint remark, "I think *our* wagons, Durham, must be four-horsed ones." There are members of the London Corporation, to seek no further, whose wagons must be six-horsed ones, and well loaded at that.

UNHEALTHY PUBLIC BUILDINGS AT WASHINGTON.

While New York is to be congratulated on its sanitary ordinances, the Capitol of the country appears to be suffering from lack of Congressional action. We have received since our last issue (says *Building*), the report of Mr. Samuel A. Robinson, the inspector of plumbing of the District of Columbia, who pathetically remarks:

"Nothing has been done to remedy the deplorable defective condition of the drainage in the buildings occupied by the General Government. Every effort has been made by this office, and those in authority in the Departments, to bring about a reconstruction of the plumbing work, but Congress seems not to appreciate the great importance of giving relief to those public servants who have so long been compelled to breathe this polluted atmosphere. This result must be fatal. The evil is allowed to exist because its first manifestations are not in a form that appals and terrifies. Its approach is slow and insidious. At length, the frame racked with pain, a mind debilitated, unbalanced, or diseased, powers of usefulness destroyed, are the fatal result of a few years spent in the poisonous atmosphere of our Government buildings. These statements are no exaggeration of the evil, for exaggeration is impossible. A few of our leading hotels have made changes in the plumbing fixtures, with partial ventilation, which somewhat improves their sanitary condition, but none have as yet adopted a system entirely satisfactory, or that would entitle them to a certificate of approval from this office."

THE POPE'S DAILY ROUTINE.

From the *New York Epoch* we learn that the Pope, although now approaching four-score years, labors with greater industry than any secular sovereign in Europe. Like Napoleon, he spends little time in sleep, rising at six in winter, and an hour earlier in summer. He spends an hour in meditation, in preparation for mass, which he says at 7.30 every morning. Then he takes his breakfast, as he does all of his meals, alone. This repast consists of chocolate, an egg, fruit and bread, without butter. Breakfast over, he retires to his cabinet where the affairs of the Church engross many hours of his time. Later in the day he gives audience and afterwards walks in the gardens of the Vatican.

At six o'clock the Holy Father dines, the meal being, except on fish days, one small plate of soup, one dish of meat, some fruit, and a part of a glass of light Italian wine, called *Chiangi*. It may be mentioned that the daily expenses of the Pope's table amount to $1 in winter, and 60 cents in summer. After dinner he takes a brief siesta, and then receives the cardinals and distinguished foreigners, laymen and clergy. As the evening advances, four lighted candles are brought in, but as soon as the servants are dismissed the Pope puts out two of the candles, and, being now alone, continues his work till a late hour. At four in the morning, sometimes, his attendants find him with his head laid upon the desk, asleep, and the candles burnt out in their sockets.

THE DOCTRINE OF SPECIFIC REMEDIES.

The editor of the *National Baptist*, a leading religious journal of Philadelphia, relates the following of the late Dr. Howard Malcom:

While at Bangkok, Siam, he met a native physician resident in that capital, who kindly developed to the visitor his system. "I have never lost a patient, whatever his disease. I have discovered that there are just fifty-six diseases that man is liable to. And I have compounded just fifty-six pills, one for each diseases; if a man has one disease, I give him the appropriate pill; if he does not soon get well, I give him one of another kind; if he still does not improve, I give him all the fifty-six. And I have never failed to cure every disease." Shortly, a man of some local eminence in the city died. Dr. Malcom said to the physician, "What a pity that you were not his physician." "But I was." "Oh, then, you *have* lost one patient?" "Not at all." "Why, how is that?" "Why," replied the physician, "it wasn't any one of those fifty-six diseases that had hold of him; it was *death* that had hold of him. Nobody can cure death."

It occurs to us that in America are not a few physicians of the same school as the Siameese doctor, only some of them have improved methods of administration of the remedies; one is with the *shotgun* prescription, by which means the full list of remedies are gotten into the patient in shorter time than would be otherwise required.

DISTILLERY SWILL AS A FOOD FOR MILCH-COWS.

Mr. Charles Cabanne writes as follows in *Science* of August 5, 1887:

Some eighteen years ago I owned a dairy, and run on one thousand acres of land eight hundred cows. I had one stable that held 672 cows; it was kept clean, and was well ventilated. For eighteen months I fed distillery swill. From my experience in feeding swill to milch-cows, I should say that it produces tuberculosis. In addition to swill, I fed grass and hay, and during the summer months "soiled." At the expiration of eighteen months I stopped feeding swill, and the number of cows that had to be disposed of because they had consumption was reduced to so few, that I do not now remember that there were any. It is my opinion that if cows are closely confined and fed on swill and hay exclusively, tuberculosis will develop in nine cows out of every ten inside of a year. The nutritive quality of swill food depends upon the amount of water put upon the grains after fermentation. I have never had any practical experience in feeding sweet distillery swill; but, if fed in moderate quantities, not too hot and sweet, and with hay and with other dry and very nutritious food, I can see no reason why it should be harmful. Parties who produce swill-milk for sale in large cities find swill to be the cheapest food for the production of milk, and consequently use it to excess. I have never seen swill fed sweet in more than one city dairy, and I have been in fifty.

DIAGNOSIS OF CHOLERA.

A striking illustration (says an exchange) of what can be accomplished for public health by utilizing some of the new steps in science has recently been shown by the diagnosis made in the Carnegie Laboratory, of the presence of cholera germs on board of a steamer just arrived at Quarantine. The steamer was from an Italian port and loaded with emigrants. No case of cholera had occurred during the voyage, but just before the vessel arrived at Quarantine a suspicious case of diarrhœa in a child was noticed. From these dejections sterilized tubes were inoculated and taken to the Carnegie Laboratory and the diagnosis of cholera was made. This diagnosis was confirmed by the speedy appearance of several cases of cholera among the emigrants. But for the test so accurately made cholera germs sufficient to breed a pestilence might have found their way through the hundreds of emigrants not only into the city but throughout the country. The enlightened liberality of Mr. Andrew Carnegie has given to the city and the nation in the splendidly equipped laboratory which has his name, under its present able management, a most powerful safeguard against the pestilence which has more than once desolated our country.

PREPONDERANCE OF WOMEN IN GERMANY.

A statistical report concerning the marriage prospects of the fairer half of creation in the civilized portion of the world is rather unfavorable to the weaker sex. Bosnia makes the best show, the proportion between the male and female population being 1,000 to 805; Greece comes next with 906 women to 1,000 men; Roumania, with 944; the United States, with 965; Servia, with 988, and Italy with 995 women to 1,000 men. In Germany, the female element predominates almost throughout, with the exception of Westphalia, Schleswig-Holstein and Rhenish Prussia. After these three provinces, the proportion of women to 1,000 men is as follows: Duchy of Brunswick, 1,000.55; Schaumburg-Lippe, 1,004; Hesse, 1,019; Oldenburg, 1,020; Anhalt and Merklenburg-Schwerin, 1,023; Lippe-Detmold, 1,027; Alsace-Lorraine, 1,028; Prussia, 1,038; Mecklenburg-Strelitz, 1,045; Saxe-Meiningen, 1,045; Reuss (older line), 1,047; Baden, 1,048; Schwarzburg-Sonderhausen, 1,049; Reuss (younger line), 1,050; Hamburg, 1,052; Bavaria, 1,054; Saxe-Altenburg, 1,055; Schwarzburg-Rudolstadt, 1,058; Saxony, 1,063; Saxe-Weimar, 1,065; Lubec, 1,070; Wurtemberg, 1,077; Saxe-Coburg-Gotha, 1,081; Bremen, 1,084, and Waldeck, 1,100—making the average for the whole of Germany, 1,000 to 1,043.—*Paris-American Register.*

A WAY TO SECURE TESTIMONIALS.

The last issue of the *Druggist's Circular* contains a communication from a prominent pharmacist on the above subject. He says: "not long since I was in one of the neighboring cities, when I was shown by a brother drug clerk a confidential letter from one of the largest nostrum houses in this country. This letter stated that they would pay him 50 cents each for testimonials to their medicine. He informed me that a few days before there was a circus in his city, and during the day he secured over 250 names from the different negroes who were there that day. Not one of them had ever tried the medicine. I asked him how he secured them. He said he had the testimonial written out, and then made up a large bottle of "Prohibition" tonic. He would give them a drink and tell them they had to sign a receipt for it, the receipt being a testimonal to the nostrum. After he had the signatures he would write under them that this one was a prominent citizen, another an eminent divine, another an old citizen, etc. Not one of the 250 ever took a dose of the medicine."

IMPURE DRUGS IN NEW JERSEY.

Under the provisions of the "Food and Drug Act," passed by the last Legislature, the Dairy Commissioner of New Jersey (*Med. and Surg. Reporter*) is empowered to examine foods and medical products offered for sale in that State, for the purpose of testing their purity. Assistant Dairy Comissioner McGuire has been visiting drug stores in the different parts of the State, and has found that many pharmacists have adulterated the drugs and chemicals sold by them. Mr. McGuire discovered that with drugs such as laudanum, spirits of nitre and purgatives in common use the adulterations had made them below the United States pharmacœpia standard. At one place, Mr. McGuire collected twelve samples of different drugs from the drug stores and found one-half far below the standard. In another, he was surprised to find that nearly all of the seidlitz powders exposed for sale were only about half weight.

DRIVEN CRAZY BY INHALING ACID FUMES.

Dr. Howard A. Lever, Health Officer of the town of Flushing, L. I., has filed his report on several cases of insanity which have recently caused much trouble in College Point, L. I. Two of the men, Montz Beyer and Charles Schwartinger, are raving maniacs in the Poughkeepsie Asylum. It was alleged that the fumes of the acids used on the preparations of rubber in the works where the men worked had effected their brains. In his report Dr. Lever confirms this theory, saying that, in his opinion, the inhaling of the volatile fumes of bisulphate of carbon was the direct cause of all of the mental derangement. The Board of Health has ordered the proprietor of the works to take greater precautions against the escape of the fumes, and to post notices of the dangerous character of the work, so that the employees may be on their guard.

DANGERS OF DUSTS.

Building tells us that a paper was read by Dr. Henri Napias before the Congress of Industrial Hygiene, held at Rouen, on the dusts developed in industries and the methods of guarding against injury from them. Dusts in the air call for a special consideration, from the fact that, besides vitiating the atmosphere in the way that gaseous impurities also do, they exert a mechanical action when brought in contact with the respiratory and digestive systems.

Even when they are wholly toxic or essentially irritant effects, they are foreign bodies and obstructive, and are always in danger of exerting a traumatic action or causing abrasions. They are, therefore, all dangerous, while the dangers arising from them may be various in character. Mineral dusts, whether of stones or of metals, are the most dangerous, because, besides being hard and sharp and liable to cut the tissues, very many of them are also poisonous or caustic.

Dusts of organic origin are less dangerous, but they vitiate the air, communicate unpleasant qualities to it if they are of an animal nature, and are frequently vehicles for the conveyance of infectious germs. Various inconvenient affections of the lungs are caused by breathing these dusts, among which may be counted phthisis, not as produced directly by them, but as often ultimately induced by the abrasions or deterioration of the tissues which they immediately occasion.

The readiest and most available means of removing dusts is by ventilation, and when this can be so directed as to take them away as soon as they are formed, it is almost sovereign. It will not do, however, to rely upon general ventilation, for that will at most remove the dusts but imperfectly, while its usual operation will be more likely to distribute them more widely among the operatives.

The remedy should be applied to light dusts by means of chimneys or draught-flues; and to the heavier ones by means of blasts to drive them away. In cases where the dust itself is the object of the manufacture, or is to be applied in the manufacture, the remedy is to conduct the processes in closed apparatus. When either method is practicable, the dust may be kept down or removed by water, or the articles may be worked in a moist condition.

Some workmen employ masks or respirators as means of individual protection, and they may in some processes be the only efficient means available. They are liable to the objection that they are always cumbrous and inconvenient; and frequently the workmen will become careless about them, or refuse to be bothered with them, and will leave them off. They should not be depended upon when any practical means of keeping down or removing the dust can be employed.

DRINKING WATER A MERE HABIT.

In a leading educational journal of the United States recently appeared an extract from an address before a body of teachers, in which it was asserted that "*drinking water is a mere habit*;" and in an address made before a State assembly of teachers not long ago, a prominent educator made use of the same expression, Drinking water a mere habit! Water forms 70 odd per cent. of the body, and is constantly escaping from every pore of the skin, from the kidneys, the lungs and the alimentary canal, and yet to supply this constant waste is *a mere habit* which wise teachers are to break up. This is a sample of the kind of physiological instruction which is retailed to the pupils in our schools. But if this is from the leading teachers, what may be expected from the rank and file? G.

INSECTS AS ONE OF THE CAUSES OF EPIDEMICS.

The *Indiana Pharmacist* says that Dr. R. S. Maddox, in a paper read before the Royal Microscopical Society, details the results of further experiments in feeding insects, especially the common blow-fly, on the comma bacillus. His observations include a large number of microscopical determinations. The result of all his investigations lead him to believe that the comma bacillus from culture can pass in a living state through the digestive tube of some insects, and, through this fact, that such insects are likely to become an important means of distributing disease, especially to animals that feed upon them. This is in accordance with the views of Dr. Grassi, that "insects, especially flies, may be considered as veritable authors of epidemics and agents in infectious maladies."

DIET IN DISEASE.

The relation of food to certain abnormal states is well known (*N. Y. Med. Times*), to disregard which would be fatal to the success of any method in therapeutics. There are conditions, in fact, in which diet, and not medicine, is the leading indication of treatment. We have repeatedly cured chronic flatulence, occuring in aged persons with enlarged livers, by eliminating sugar from their dietary. All know the superiority of lean meat and skimmed milk over any form of medicine in diabetes; the benefit of a milk and farinaceous diet in catarrhal affections of the stomach; of cooked milk (boiled half an hour or more) in enteritis and ulceration of the mesenteric glands; of fresh vegetables in scurvy; of fruit, and bread made from unbolted wheat-meal in chronic constipation, etc.

A REMARKABLE MAN.

Robert Colby, the successful Wall street banker, whose father was once Governor of New Hampshire, is one of the most remarkable men physically in the country. He is over seventy years of age, but looks like a man in the prime of life. He walks every day from Murray Hill to Wall street and back again, and began this practice forty years ago. Three evenings in the week he spends in active exercise in a gymnasium. In summer he swims daily in the Harlem river, and dives as gracefully as a boy. He is in perfect health, and attributes his success in life to the attention he has paid to athletics. He is very popular with local athletes.

THE CONTAGIUM OF SCARLET FEVER.

From the *Glascow Medical Journal* we learn that some interesting researches have lately been conducted in Edinburgh, by Dr. Edington, the object being to discover the "germ" of scarlet fever. Dr. Edington found a particular bacillus in the blood early in the disease, and in the desquamating epithelium at a later date. This organism was found capable of giving rise in animals to a disease resembling scarlet fever.

THE DEPENDENCE OF SUMMER DIARRHŒA UPON ELEVATED TEMPERATURE AND BAD HYGIENE.

The *Med. Times* tells us that Dr. Meinert, of Dresden, recently read a paper on the influence of the temperature of the atmosphere on the mortality from diarrhœas of nursing children. This gentleman spoke of the insufficient ventilation and too great warmth of the houses during the summer months. It is worthy of observation that the death-rate in the several stories of the house is different. In the rooms of the cellar, which are generally cool, the death-rate from diarrhœal diseases reaches only 4 per cent. It is highest, however, on the ground floor, where it reaches 12.75 per cent. This is supposed to be occasioned by the fact that this floor is exposed both to the direct rays of the sun and to the reflected heat from the ground. In the first, second and third stories the mortality is considerably lessened. Houses which cool off slowly, as brick and stone ones, and the houses of bakers in which the bake-oven is built, thus keeping up the heat, have more children suffering from these diseases than others. In the working classes, the mortality among children from this class of diseases reaches 31 per cent.; in the middle classes, 28 per cent., and in the higher classes a lower proportion. The better classes, by opening their windows and clothing their children in a sensible manner, avoid this high mortality. It is interesting to notice that in the South of Europe, for instance in Italy, where the houses are built with the idea of being as cool and well ventilated as possible, the death-rate from these diseases is not so high as in Germany, where this ventilation is not thought necessary.

EX-RESIDENT PHYSICIANS OF THE PHILADELPHIA HOSPITAL.

A social organization has been formed among the ex-resident physicians of the Philadelphia Hospital. The object of the association being to foster good fellowship among the members; the only duty of membership consists in attending a good dinner once a year, the first Tuesday of each December being the date decided upon. Dr. Alfred Stillé was the first president of the association, and Drs. S. W. Gross and S. S. Stryker the first vice-presidents. On Tuesday, Dec. 6th last, the following gentlemen sat down to their first annual reunion:

Dr. Alfred Stille,
“ H. C. Wood,
“ H. C. Bœnning,
“ F. M. Perkins,
“ S. W. Gross,
“ C. A. Oliver,
“ A. S. Smith,
“ S. S. Stryker,
“ C. C. Lee,
“ G. W. Vogler,
“ George Hale, Jr.,
“ J. B. Walker,
“ L. P. Bush,
“ J. A. Hagy,
“ E. T. Bruen,
“ J. F. Edwards,
“ H. M. Neale,
“ F. H Elder,
“ Harrison Allen,
“ J. Ewing Mears,
“ E. W. Holmes,
“ W. A. N. Dorland,
“ A. A. Bliss,
“ R. G. Curtin,
“ J. H. Musser,
“ R. W. Deaver,
“ J. K. Young,
“ G. S. Hull,
“ G. M. Wells,
“ E. R. Stone,
“ S. D. Lazarus,
“ R. H. Hamill,
“ T. C. Potter,
Dr. De Forest Willard,
“ J. P. Tuttle,
“ D. F. Woods,
“ E. F. Garrett,
“ R. J. Phillips,
“ J. K. Lineaweaver,
“ A. W. MacCoy,
“ J. C. Hall,
“ Philip Leidy,
“ C. E. Bricker,
“ C. S. Potts,
“ A. J. Plummer,
“ Z. P. Boyer,
“ J. S. Gibb,
“ J. A. Davis,
“ E. E. Graham,
“ B. F. Stahl,
“ R. M. Girvin,
“ M. B. Musser,
“ J. C. Da Costa,
“ A. C. W. Beecher,
“ W. G. Porter,
“ J. H. Jamar,
“ W. L. Nichol,
“ W. E. Parke,
“ W. Penn Buck,
“ T. J. Ellinger,
“ P. E. Loder,
“ H. H. Levy,
“ J. R. Abbott,
“ H. E. Goodman,
“ G. H. Fox,
“ E. L. Duer.
Dr. H. H. Freund.

The occasion was a most enjoyable one; old friendships were renewed, new acquaintances made, and all enjoyed the sumptuous repast provided by the Executive Committee. Remarks were made by Drs. Stillé, Bush, Gross, Jamar, Wood, Lee, J. H. Musser and others. These annual reunions will surely be most delightful affairs.

THE MILK-SUPPLY OF CITIES.

Dr. Cyrus Edson, of New York, advocates the examination by veterinary inspectors, from time to time, of every herd of cattle in the State, in order to secure the destruction of all animals suffering from tuberculosis, and the quarantine of those liable to cause contagious disease. Professor Albert Leeds says that official inspection should be extended so as to include the pasture, the stall, and the dairy. Skilled and scientific effort in this direction would prevent the spread of infectious diseases from cattle to man.

POISONING BY SELTERS WATER.

Over thirty cases of poisoning were reported recently in Rendsburg, and the occurrence, of course, occasioned great excitement in that quiet German city. Inquiry showed that only those were poisoned who drank freely of Selters water, and an examination of this water revealed the fact that it contained a very appreciable amount of arsenic. The water was a manufactured product, and had been imported from another city.

LONGEVITY IN ITALY.

According to the last Italian census, the number of persons over seventy-five years of age in that country was 381,229, of which 195,997 were men and 185,232 women. The proportion of individuals over seventy-five years of age to the entire population was 13 per 1,000. In Liguria the proportion was 19 per 1,000, while in Latium it was but 9.

TERRIBLE VIRULENCE OF DIPHTHERIA.

Dr. C. N. Vale, of Negley, Ohio, after a recent post-mortem on a case of diphtheria, took a portion of the diseased membrane of the throat to his home for microscopic investigation. His research was conducted with the utmost carelessness, even some of his children being allowed to view the germ through the microscope. Two died, and the doctor himself succumbed to the disease, while five remaining children are at the point of death.

For a corroboration of this newspaper report, we wrote to Dr. S. M. McConnell, of Wellsville, Ohio, who says, "We have no contradiction of the account here, though living only about fifteen miles distant."

THE WORK OF THE CHOLERA IN FRANCE AND SPAIN.

M. Mahé has published in the *Annales a'Hygiène* an elaborate statement of the recent cholera epidemic. In France the number of deaths from the affection in 1884–85 exceeded 13,000, which gave 1 death in 3,000 inhabitants. In Italy 30,000 persons succumbed, or 1 in 900 of the population. Spain gave a much higher mortality, 180,000, or 1 in 100. Thus it is computed that the three countries lost 220,000 inhabitants out of 600,000 attacked during those two years, and the material loss in one way or another exceeded one hundred million dollars.

A CAUSE FOR DIPHTHERIA.

There is considerable diphtheria in various parts of New Jersey, and the Secretary of the State Board of Health, Dr. Hunt, thinks it is largely due to damp cellars which are suddenly heated in the fall. This theory has been verified for several years by reports from various places where the disease has raged. It is claimed that during the summer in many cellars a good deal of vegetable matter is allowed to decay, and when the fires are started in the fall this decayed matter is stirred up and mingled with a peculiar dampness which must be in the cellar, and it pervades the entire house.

CHILDREN'S TEETH.

The Paris *Figaro* says that if you want your children to have pretty teeth you must begin with the second dentition to press back with the finger every morning the teeth which have a tendency to project forward, and to pull forward those which tend backward. As a wash, boil in a tumblerful of water a pinch of quassia wood, with a pinch of pulverized cacao. It strengthens the gums and whitens the teeth, without injuring the enamel which covers the bone. Wash the mouth after each meal with lukewarm boiled water.

GOOD FOR THE "DIARY."

A young lady went into a store to purchase a diary, and had about concluded to secure one shown her, when she changed her mind, and said: "I guess I'll take a purse for the diary." An old lady standing near, and who only partially heard the foregoing announcement, went over and said in a loud whisper: "Miss, don't you do it; take blackberry cordial."

HEALTH OF POSTMEN.

Postmen are said to be a very healthy class, except as to their eyes. Nearly all suffer some impairment of vision, due to their being obliged to read in the glare of the sun. Postmen not infrequently suffer from sciatica.

CREMATION IN CASES OF DEATH FROM YELLOW FEVER IN BRAZIL.

From the *Mississippi Valley Medical Monthly*, we learn that by imperial decree cremation has been made compulsory in Brazil in cases of death from yellow fever. The cost of the crematorium and all other expenses connected with the cremation are to be paid by the community.

THE INTER-MARRIAGE OF COUSINS.

The Legislature of Illinois has passed a law making the inter-marriage of cousins a penal offence. This is an unwise law (says the *Med. Record*), first, because it interferes unduly with personal rights, and next because it is not called for. The marriage of cousins who are each of healthy family and physique, and especially if they are of different temperaments, is quite free from danger.

ADULTERATION IN RUSSIA.

The *British and Colonial Druggist* says that the adulteration of articles of food in Russia is in future to be severely punished, the courts having power to inflict from three to six months' imprisonment, and a fine of from 300 to 600 roubles for a first offence, while a second conviction will deprive the offender of his civil and political rights, in addition to fine and imprisoment.

EVASION OF VACCINATION.

Dr. Cyrus Edson recently startled the New York Board of Health by the report that the rules in regard to vaccination of children in public schools had been systematically violated. It is a common practice for parents to lie about the matter to get their children in the schools without vaccination, In one school 130 out of 520 children were found to be unvaccinated. Teachers and principals had neglected the matter.

AND CONTENTMENT TO THE MIND.

A narrow shelf over a door, decorated with a few good pieces of china, or even one or two good terra-cotta figures, lends a great charm to a room and a furnished look to the walls, more particularly if there be curtains to the door. A draped doorway adds an indescribable charm to a room.

COMMITTEE ON EPIDEMIC DISEASES.

One of the significant signs of the times, showing how public sentiment points towards hygiene, is found in the fact that in the present Senate of the United States there is a committee on "Epidemic Diseases," with Senator Stanford, of California, as Chairman.

ATMOSPHERE PURIFIER.

The Berlin Medical Association recommends the following new air purifier, as especially useful in the sick chamber:

Take of Oil rosemary	10.0 parts.
Oil lavender	2.5 "
Oil thyme	2.5 "
Nitric acid	30.0 "

Shake well before using.

Saturate a sponge, and place in a convenient position for spontaneous evaporation.

BUSINESS ENTERPRISE.

"What's the price of sausages?" "Dwendy cents a pound." "You asked me twenty-five this morning." "Ya; dat vas ven I had some. Now I ain't got none I sells him for dwenty cents. Dot makes me a repudation for selling cheab und I don't lose nuddings."

The Annals of Hygiene.

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Communications.

THE TENEMENT-HOUSE PROBLEM.

BY CHAS. F. WINGATE, SANITARY ENGINEER.

The tenement-house system has grown up in this country within a brief period, and has lately assumed colossal proportions. It is barely forty years since the first large tenements were built in New York, and now they number close on to 26,000 in the metropolis, and are multiplying in almost every large northern city, excepting Philadelphia.

The growth of cities is the great feature of our time, and the problems of city administration and life are the most pressing and most difficult of solution. Foremost among these is the question of housing the poor. Nothing but radical measures will serve in dealing with this social excrescence. It will not do to ignore it, or to apply palliatives, but the ulcer must be cut out and the deadly Upas tree removed, root and branch. It is the natural product of the inordinate growth of modern cities during the present century, consequent upon the development of commerce and manufacturing, the high price of land for building, and the lack of means of transit to the suburbs. Its effects have been heightened by the labors of the Buddensick class of shoddy or "speculation" builders, who have erected most of the houses in our towns and cities. Another important factor has been the enormous influx of a low grade of Italian, Polish, Russian and Chinese immigrants, whose ignorance of hygiene, combined with their extreme poverty, has made it exceedingly difficult to enforce sanitary regulations among them. From necessity they have sought homes in inferior houses, managed by unscrupulous landlords, who have no interest in keeping them safe and wholesome.

In most American communities each family occupies a separate dwelling. Philadelphia, Brooklyn and St. Louis are noted as cities of "homes." Even in factory towns, workingmen have at least half a house. As the price of land advances it is not found profitable to build small houses, suited for mechanics, on the ordinary city lot. A $1200 house may pay a fair return in Philadelphia, or even in Brooklyn, where land is comparatively cheap, but on Manhattan Island, especially in the tenement districts, such houses would not be profitable. Larger buildings have therefore been erected to accommodate eight, twelve and even sixteen families under one roof; while in the rear of the same house another tenement will be built to contain half as many more families. It is common to find over a hundred persons living on a single lot, 25 x 100, which would allow a space five feet square to each individual. Only in New York and Chicago are the largest tenements found, though Boston has a few of them.

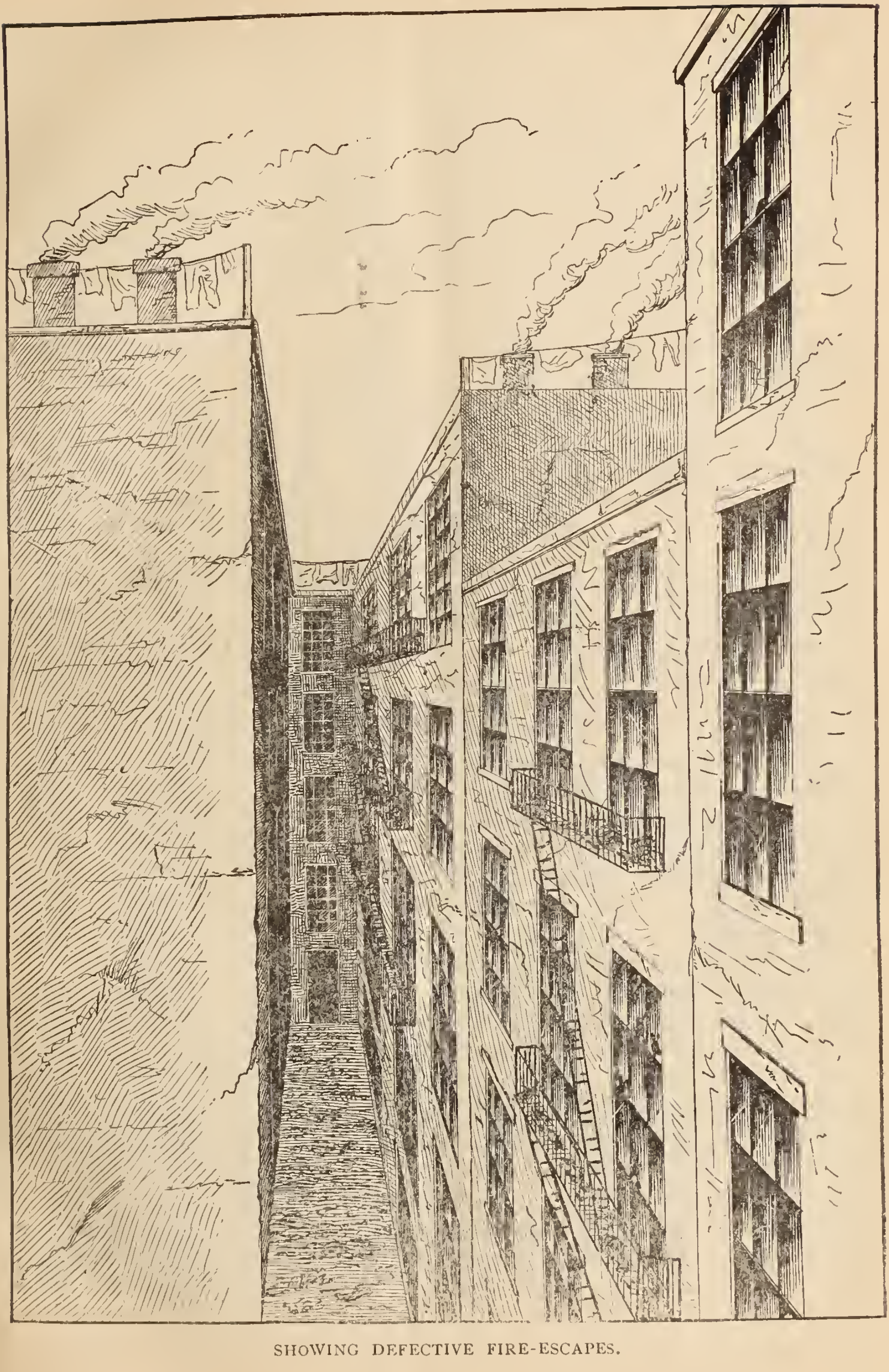
In the metropolis, the first tenements were converted from private dwellings, whose occupants had moved to more fashionable localities. Hundreds of such houses now contain four or more families, and the contrast between their former splendor and their present dirt and disorder is striking. As they were solidly built they resist decay, until tenanted by the class of "wreckers" who would destroy any structure. These dwellings have been gradually displaced by others, designed specially for tenements, and containing four families on a floor. These are known as double-deckers, and may be found by hundreds on Manhattan Island. They are usually four stories in height, with a central hall, containing a narrow stairway, dimly lighted from a skylight on the roof. Each floor has four suites of rooms. Every family has a living apartment, 12 x 12, and a dark bed-room, 6 x 7, opening from it. The ceilings are low, and the rear rooms are lighted from a narrow court. As the front and rear apartments do not communicate, there is no possibility of a free circulation of air. Such air as does gain admission is laden with street dust and odors, or with the stenches from foul privies in the yard. Rooms on the lower floors rarely receive the sun; the cellars are damp; the water supply insufficient, as it has often to be carried in pails from the yard hydrant to the upper floors. Owing to the thinness of the doors and partitions, and the flimsy, warped wood-work, privacy or quiet are impossible.

The population of London is growing at the rate of 1000 per day, and New York is increasing almost as rapidly. Where the people come from no one can tell. The suburbs are gaining in population almost as fast as the metropolis. Brooklyn has shown an addition of 550,000 people during the past year. To accommodate this increase, hundreds of tenements have been built and are building. In the past ten months of the year 1887 no less than 1681 flats and tenements, of an estimated value of $32,286,500, were begun in New York, against 882 dwellings of an estimated value of fifteen and a half millions. Before long none but the very few will be able to enjoy the luxury of a separate dwelling, but all will be housed in flats or tenements.

CROWDING OF POPULATION.

From its peculiar shape New York City is ill fitted for accommodating a large population. Manhattan Island is long and narrow, and New Jersey and Long Island are difficult of access, owing to the intervening rivers, with the delays of travel from fog and ice; while, until the elevated railroads were built, there were no means of reaching Harlem and Westchester county cheaply and quickly. Furthermore, the entire suburbs of New York have been devastated by malaria, which has hampered their growth. Those sections which have been healthful have been monopolized by people of means who have not encouraged workingmen's settlements in their vicinity, while the high price of land has prevented their successful formation.

Still another obstacle to sanitary building in New York has been the unvarying size of the city blocks and building lots, which has forbid anything but the stereotyped form of house, and has led grasping builders to build over the whole ground to avoid waste. If the present block system could be abolished, and streets cut through the centre of each block, it would be possible to erect smaller and more healthful houses, and very probably such a change will be made in the future



SHOWING DEFECTIVE FIRE-ESCAPES.

as a sanitary safeguard, but it will be costly, and only accomplished in the face of great opposition.

In New York City we have been trying to see how many persons could be packed upon a given area, as the mediæval metaphysician sought to decide how many angels could stand upon the point of a needle. The extent of the crowding of population in the metropolis is shown by the following table, which shows the number of houses and population of different cities in the Union in 1880, with the numher of persons to each house:

City.	Population.	Houses.	Ave. inmates per house.
Philadelphia	847,170	146,412	6
Brooklyn.......	566,663	62,233	9
St. Louis.......	350,518	43,026	8
Chicago........	503,185	61,069	8¼
Baltimore.......	332,313	50,833	6½
Boston.........	362,839	43,044	8½
New York......	1,206,689	73,684	16½

These last figures, however, are deceptive, and they should be divided as follows: Of the total number of dwellings in New York, 10,314 contain one family, or six persons, including domestics; 16,982 houses or flats contain one family on a floor, or twenty-five persons; while 18,966 tenements accommodate fifty persons each on an average, or almost a million persons. This is unexampled crowding of population.

In one front and rear tenement in the 10th Ward (the Hebrew quarter), covering a lot 25x95 feet, 258 people were found. In this crowded section the population of 50,000 is mostly found in 1,300 tenements. Here is an accurate census of six tenement blocks, showing the number of houses and of rooms in each block, with the number of inmates:

CENSUS REPORT OF SIX TENEMENT HOUSES.

Houses.	Rooms.	Families.	Persons.
77........	1,860	482	2,346
60........	1,593	405	1,847
60........	1,755	457	2,035
45........	1,189	385	1,706
49........	988	383	1,432
44........	1,021	336	1,879
335........	8,406	2,488	11,245

These statistics show that an ordinary city block of tenements contains enough people to form an ordinary village. Thirty-five persons occupy the average tenement, and there are 4.52 persons to a family.

GOOD AND BAD SIDE OF THE PICTURE.

Visitors among the tenements will often express wonder that their condition is not more harrowing, and they are surprised at seeing so little squallor and outward misery. But this is because they only take a hasty or superficial survey of their surroundings. On the other hand, those who make an extended examination become filled with an overwhelming sense of weariness and pain. Even the most sturdy, the most hardened and the most indifferent observer has to succumb at last to the sights and sounds and stenches which are met with among the homes of the poor.

An investigation of some of the worst tenements would astonish most persons. The report of the Sanitary Aid Society says: "No respectable printer would print, and no daily paper admit, even the barest statement of the horrors and the infamies that may be discovered by any one on a personal visit." * * * *

"The inspectors themselves sometimes return, declaring themselves unmanned by the degradation and horrible suffering they have witnessed, and one of the best inspectors threw up his position because he felt his health giving way and nerves unstrung by the enormities with which he daily came in contact.

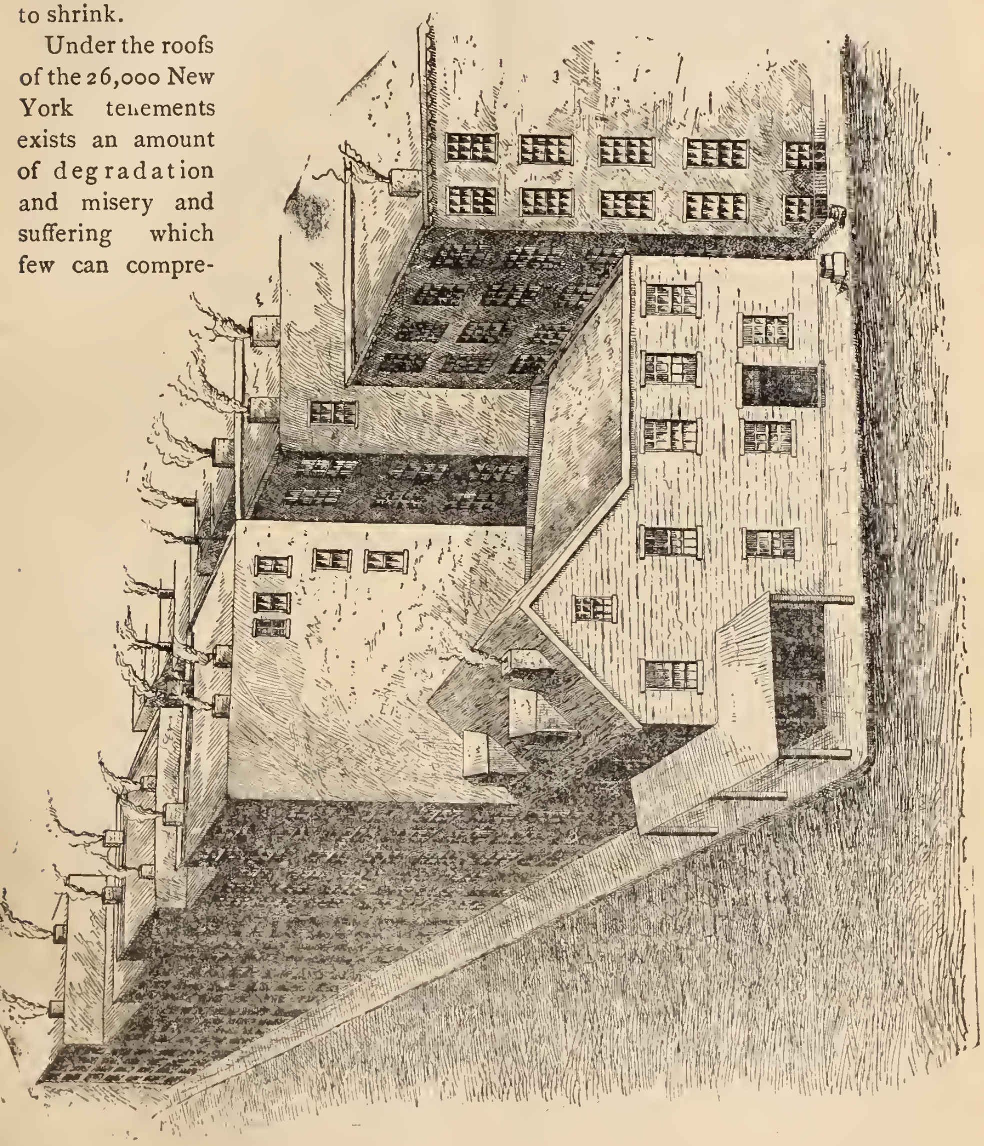
Father Huntington of the Holy Cross Mission makes a similar remark in the July *Forum*, in his eloquent and fervid discussion of "*Tenement Morality.*"

One of my own assistants has been prostrated with sickness on account of exposure in making inspections of tenements. Policemen, clergymen, undertakers and dispensary physicians, sewing machine collectors, canvassers for directories, missionary nurses and others who have to visit among the tenements, all speak of the terrible sights which they have witnessed and of experiences which force the stoutest to shrink.

Under the roofs of the 26,000 New York tenements exists an amount of degradation and misery and suffering which few can comprehend, and which paralyzes the imagination.

Yet fortunately this is not true of all or even the majority of the tenements.

If you ask any patrolman to point out some of the worst tenements in his precint, he will tell you of this or that alley or rear tenement occupied by gangs of vicious drunkards and "toughs" and by filthy Italians or Poles, or Bohemians;



but the number is small compared to the total, and one must cover a great deal of ground to find many places that are outwardly and exceptionally bad. I have visited the Big Flat and the Mulberry street bend, the Hamilton street "ship," the "Barracks" of Water street, Mechanics' alley, Cats' alley, Jew's alley on Cherry Hill, Mullin's alley, the archway in Thompson street, "Little Italy," the House of Blazes, Buckingham Palace, Bottle Alley, the Joss temples in Mott street, the Cackmackers of Baxter street, the stale beer dives and the sweating shops and the Jew schools, not to mention Little Africa, Hell's Kitchen and the other west side resorts.

Yet in comparison to the entire tenement district these bad sections are few in number. I have prepared a list of some of the very worst tenements in certain localities, and I am surprised to find how small is their proportion compared with the whole number of tenements. For example, in Washington street, out of 1,000 numbered houses, there are about thirty which are so bad as to need radical renovation. In Cherry street the worst tenements do not exceed one in five. In Mulberry street, that hot bed of squallor and foulness, there are not thirty absolutely irremediable tenements, and the same ratio will be found in Monroe, Madison, Crosby and Baxter streets. In short, it is safe to say that not more than ten per cent. of the houses in the very worst tenement districts are unfit for occupancy.

GOOD, FAIR AND BAD TENEMENTS.

The proportion of good, bad and fairly good tenements in New York may be inferred from the following statistical table showing the comparative mortality in different years:

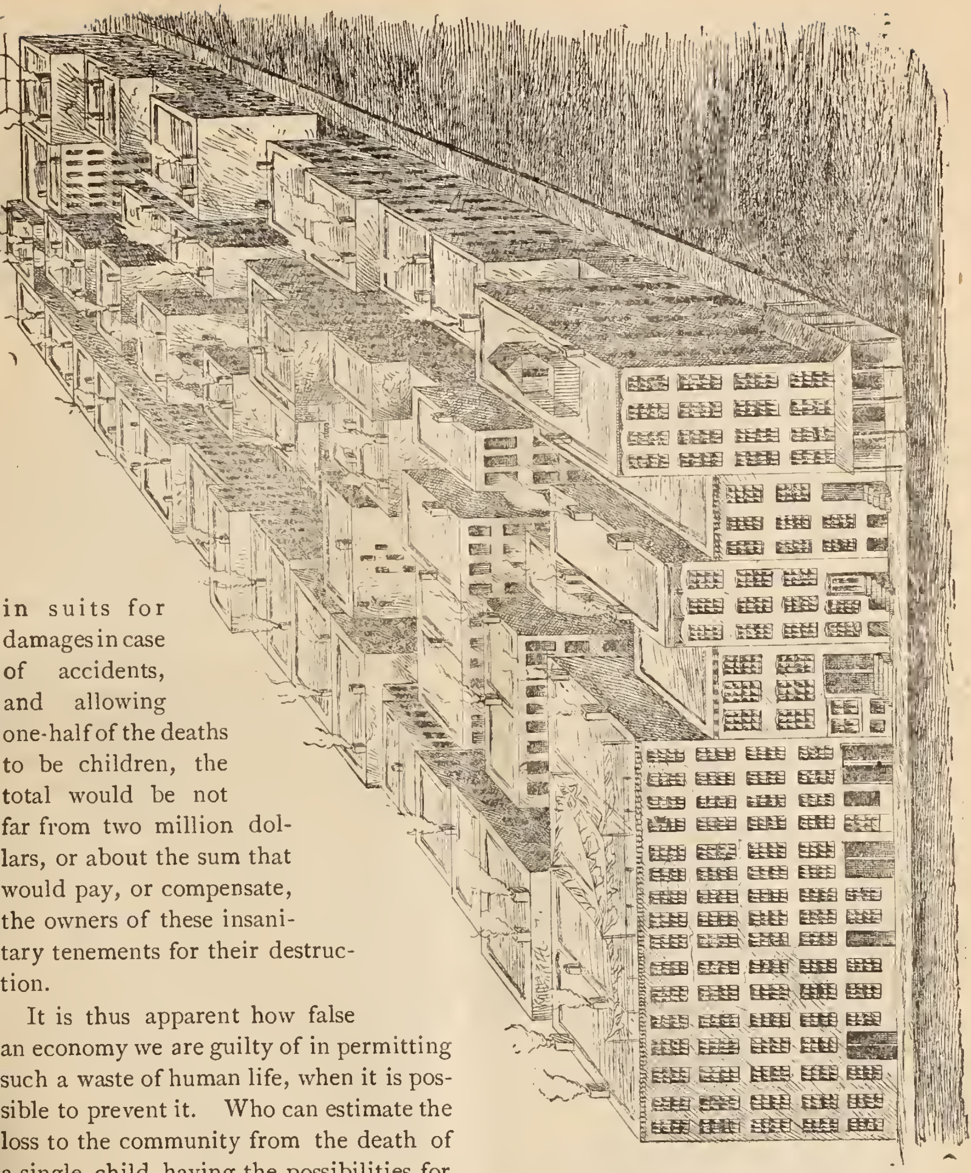
	1873.	1880.
Houses with 1 death,	5,627	6,310
" " 2 "	1,989	2,564
" " 3 "	766	1,025
Houses with 4 deaths,	288	440
" " 5 "	119	156
" " 6 "	37	74
Over 6 "	30	40
Total,	8,856	10,609
Houses with no deaths,	5,638	10,734
Total,	14,494	21,343

It thus appears that while the number of tenements in seven years increased fifty per cent., the number of those in which not a single death occurred nearly doubled. This indicates a remarkable improvement. At the same time, the increase in the number of houses which had one or two deaths is not marked, being only about 17 per cent. Yet the increase in tenements showing a high mortality is in a far higher proportion ranging from 25 to 40 per cent. In 1873, there were 1,240 tenements which had over two deaths against 1,735 in 1880. In the latter year there were 17,816 deaths in 10,609 tenements; 11,506 deaths in 4,299 tenements; 6,478 deaths in 1,735 houses and 3,403 deaths in 710 houses. The proportion of good and bad tenements may therefore be thus stated:

		Houses.	Deaths.
Good Tenements with no deaths,		10,734	———
Fair " " 1 "		6,310	6,310
Middling " " 2 "		2,564	5,128
Bad " " 3	1,025	1,735	6,478
Very Bad over 3	710		

Estimating the market value of an average tenement at $12,000, above the value of the land, which would be a high figure, and it would be fair to say that the sum of two million dollars would cover the cost of sweeping these 1,735 bad buildings out of existence.

The money value of the 6,478 lives annually sacrificed in these 1,735 houses, estimating them at the valuation placed upon an ordinary immigrant, or $1,000, would be $647,800. Taking the fairer estimate of $5,000, allowed by the Courts in appraising the value of a human life,



in suits for damages in case of accidents, and allowing one-half of the deaths to be children, the total would be not far from two million dollars, or about the sum that would pay, or compensate, the owners of these insanitary tenements for their destruction.

It is thus apparent how false an economy we are guilty of in permitting such a waste of human life, when it is possible to prevent it. Who can estimate the loss to the community from the death of a single child having the possibilities for usefulness of a Lincoln, a Franklin, an Ericsson, or an Edison, or who can estimate the misery and suffering and money loss which occur from our annual crop of preventable sickness.

LANDLORDS AND TENANTS.

The chief impression one gathers is that where houses are kept in good order the tenants are cleanly and orderly, and where they are foul and in bad repair the tenants are neglectful. In short, wherever there is any evidence of the landlord's care, there the tenants are of a better grade. I have found houses occupied by Italians where the floors were scrubbed almost white, and where the bedding and counterpanes were scrupulously clean. Flowers and pictures were in every room, and the tenants seemed intelligent and respectable. Yet, in this very house the only sanitary conveniences were in the cellar, a dark, cold, uncomfortable place, unfit for any child or woman or invalid to enter. One can fancy the dread which any timid or delicate person must feel at visiting such a place at night, or in cold and wet weather. As a result great physical suffering may follow.

In dealing with bad landlords the reformer meets with almost insuperable obstacles. "The owners of the worst houses are reckless, unprincipled men," says the report of the Sanitary Aid Society, "who take no notice of letters; upon them it is necessary for the Board of Health to act."

Any one who has read or heard the pitiful pleas of tenants in these dens for protection against inhuman landlords would be moved to indignation that such a condition of things should be permitted in a Christian age. "Many are the piteous appeals made to the inspectors for God's sake to relieve their suffering, or to compel the landlord to do his duty. Here the landlord absolutely refuses to repair, saying that the tenants deserve no better, and can move if they like; and, yet, from the amount of rent, he must make from twenty to twenty-five per cent. net on his investment. There the rent is seventeen dollars for two little rooms, and the wind is blowing through the wooden walls."

THE POOR DO NOT COMPLAIN.

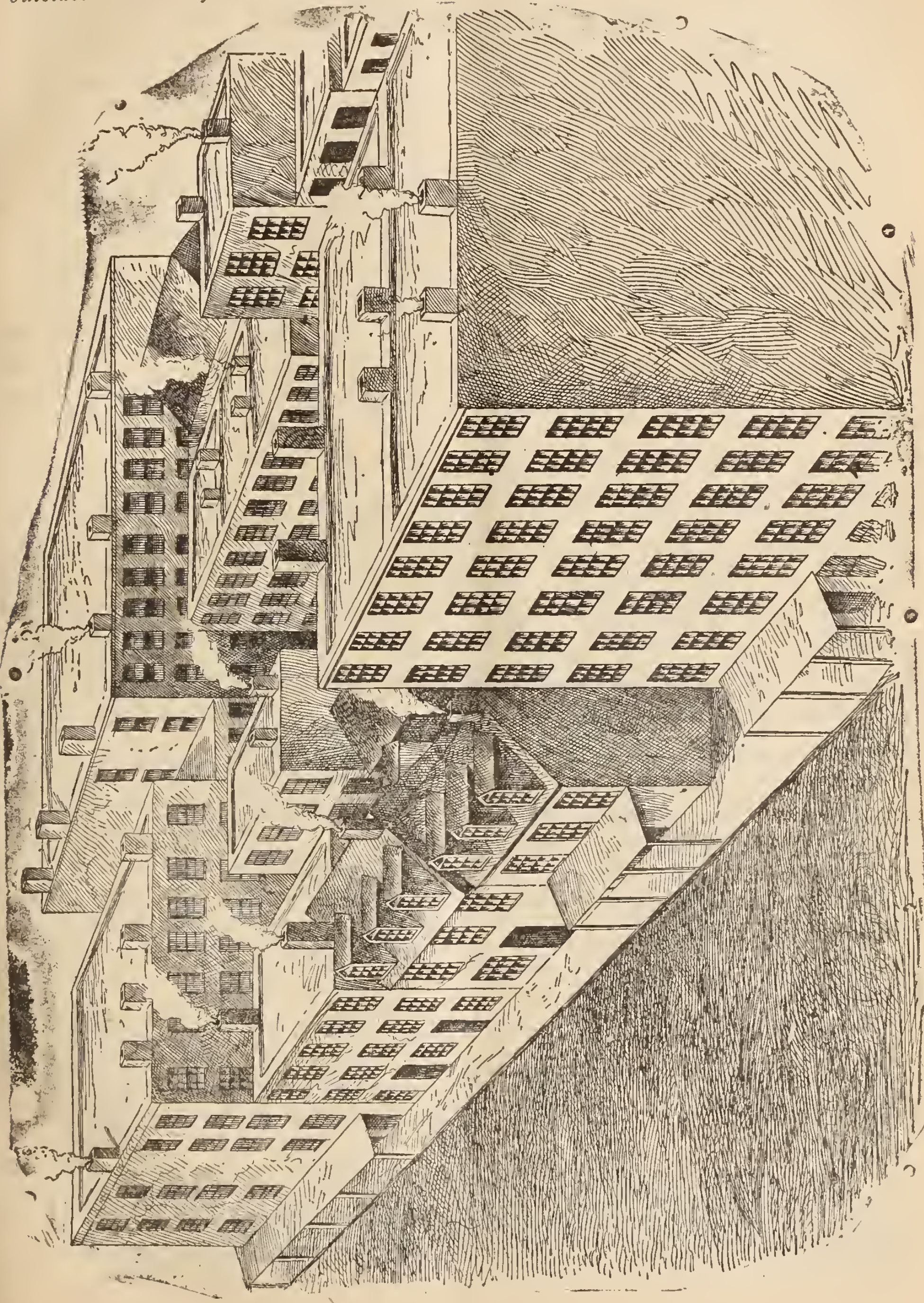
It is a remarked fact, both at home and abroad, that the dwellers in squallid houses do not complain. This is partly from habit and apathy. Those who have rushed from the smaller towns to the cities have become, as Mr. Glazier says in the *Nineteenth Century*, "so thoroughly acclimated to the present mode of existence, with its miserable, wretched surroundings, that severance therefrom would be almost a punishment."

On the other hand, the Italian, Russian and Polish immigrants find their condition so much better, even in the worst of our city slums, that, in comparison to their past life at home, they seem to be in Paradise. Another more potent reason for inaction and dumb endurance is ignorance and fear of inciting the enmity of landlords and agents.

AN ELOQUENT DESCRIPTION.

The report of the Sanitary Aid Society, in 1886, showing the condition of the 1300 tenements in the 10th Ward, the Hebrew quarter, contains the following eloquent statement of facts which show the persistent neglect of landlords in regard to the health and comfort of their tenants:

"To get into these pestilential human rookeries you have to penetrate courts and alleys reeking with poisonous and malodorous gases, arising from accumulations of sewage and refuse scattered in all directions, and often flowing beneath your feet. You have to ascend rotten staircases, which threaten to give away beneath every step, and which, in some instances, have already broken down, leaving gaps that imperil the limbs and lives of the unwary. You have to grope your way along dark and filthy passages, swarming with vermin. Then, if you are not driven back by the intolerable stench, you may gain admittance to the dens in which thousands of human beings herd together. *Walls and ceilings are black with the accretions of filth, which have gathered upon them through long years of neglect. It is exuding through cracks in the boards overhead; it is running down the walls; it is everywhere. What goes by the name of a window is half of it stuffed with rags or covered by boards to keep out wind and rain; the rest is so* *begrimed and obscured that scarcely can light enter or anything be seen from the outside.* Should you have ascended to the attic, where at least some approach to fresh air might be expected to enter from open or broken windows, you look



out upon the roofs and ledges of lower tenements, and discover that the sickly air which finds its way into the room has to pass over the putrefying carcasses of dead cats or birds, or viler abominations still. The buildings are in such miserable repair as to suggest the thought that if the wind could only reach them they would soon be toppling about the heads of their occupants.

"The rooms are crowded with sickly and dirty children. Often several families occupy the same apartment. One of the inspectors reports twenty-five in three so-called rooms, but of which two are mere closets, without windows or openings to the halls. Here is a family of father, mother and four children taking in fourteen boarders, and living in three rooms. There are fifteen people, of all sexes and ages, in two little rooms, a great portion of which is in addition taken up with old rags and refuse. One of the directors discovered parents, three children and fifteen geese living in a filthy cellar. Another visited a room which had actually not been cleaned or whitewashed for five years, and where the ceiling was tumbling down in pieces, one of the children being in bed from severe wounds on face and shoulder inflicted by the falling plaster. Here were found a woman and five small children, who were actually starving, having eaten nothing for two days; there a woman but two days after confinement being ejected by an inhuman landlord.

"Many are the rooms which are let out in the daytime by the miserable occupants to a dozen male and female tailors, who work, hollow-chested and consumptive, fourteen to sixteen hours a day on their garments or sewing-machines, filling the room with a stifling atmosphere, and influencing the young children with their ribald jokes. Some of the poor wretches even, to eke out their enormous rent, let the apartments at night for immoral purposes. Even the roofs and air shafts are littered with filthy matter, and the tenants take good care not to admit if possible the noxious odors and vile nuisances."

Here are some of the letters which have came to me during the past year.

Tenth avenue, No. 526.—"There is a sausage factory on the ground floor. They render fat, and the smell that arises from it is terrific. One child has died lately and in 524 the house is filled with sickness."

Pitt street, No. 130.—"Whenever it rains the water pours down the halls, flooding that pest hole. The tenants have not the courage to notify you, so I take it upon myself."

Macdougal street, No. 119.—"Please investigate this house. The basement alone is sufficient to breed small pox or some other virulent disease."

Twenty-second street, No. 225 East.—"The cellars are filthy and damp. The sinks are never kept in order. Should not landlords be held criminally responsible for conspiring against the health of their tenants?"

Thirteenth street, East, No. 251.—"Two children have died within three months. The closets have no water supply and poor ventilation. Sewer gas, leaky roof, filthy yard and bad plumbing are among the main grievances."

East Twelfth street, No. 500.—"We had two deaths in five days last year. There are very bad smells and no yard."

Delancey street, No. 169.—"At least twenty persons that sleep in two small rooms at night. The rooms are dirty as well as the yards and sidewalks."

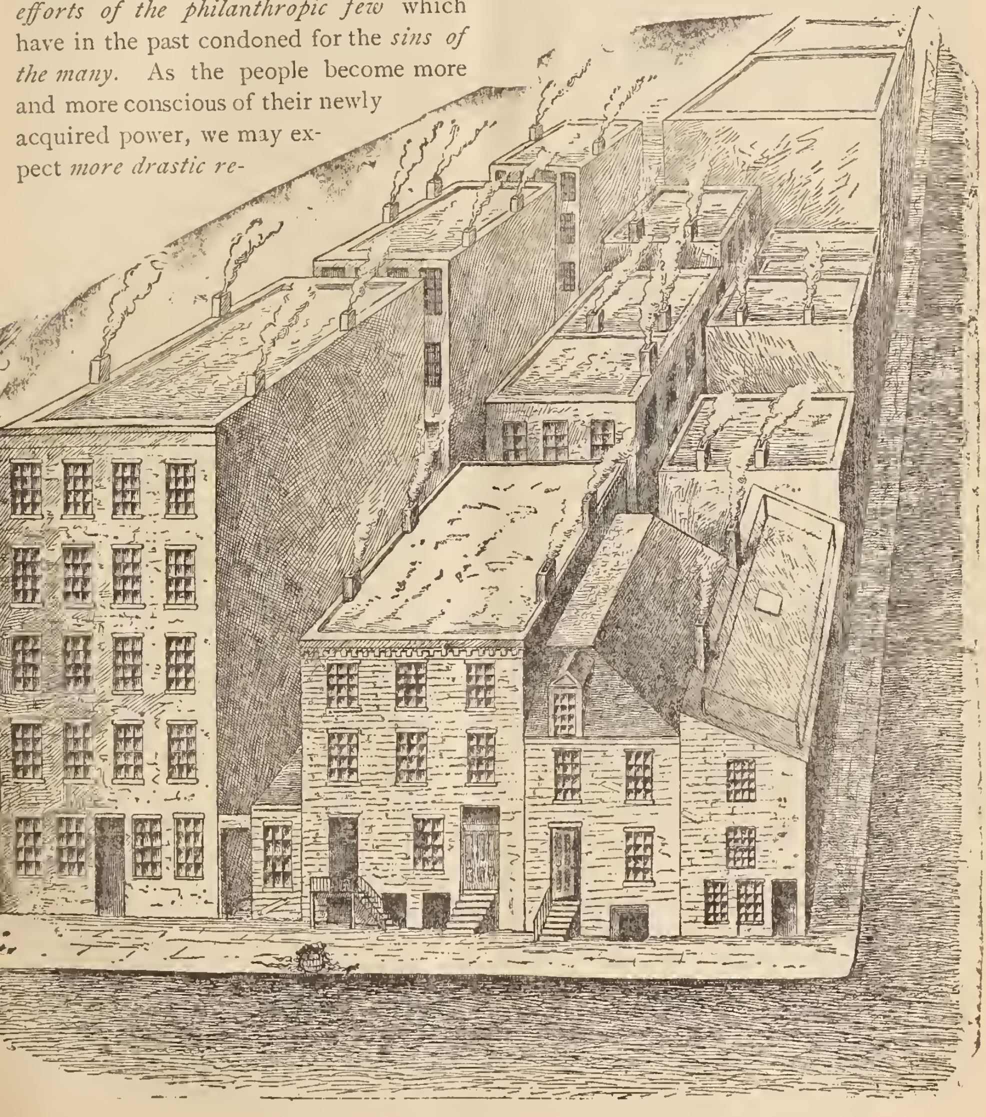
Suffolk street, No. 110.—"There is a dunghole in the yard and eight horses stabling. We have had three deaths in five months."

An English sanitary journal in quoting an eloquent and indignant protest against "those who hold us in bondage by gripping with greedy hands God's gifts of land, air, water, and all good things sent for our health and enjoyment," makes this pertinent comment:

"It is quite true that Englishmen are remarkable for their toleration of abuses. Perhaps that is owing in some measure to the fact *that those who have suffered most have hitherto been excluded from the power of helping themselves*. But that alone would not prevent an upheaval of the people against their burdens. *It is the efforts of the philanthropic few* which have in the past condoned for the *sins of the many*. As the people become more and more conscious of their newly acquired power, we may expect *more drastic reforms* than have been possible hitherto."

It is indeed a wonder that the poor "like dumb brutes" have so long submitted to the woes to which they have been subjected through the neglect of others.

The working men who dwell chiefly in the tenement houses have at last awakened to a realizing sense that they suffer most from their defective condition, and they are exerting themselves to secure reform in this direction. The



tenement problem has recently become a political issue. During the George-Hewitt mayoralty contest it was discussed from every platform, and has been embodied in the platform of the United Labor party.

EFFECTS OF THE SYSTEM.

The effects of the tenement house system in New York are shown in the high and steadily increasing mortality, especially among young children; in the increase in poverty, drunkenness, beggary and immorality; in the physical degeneracy apparent in the adult working people, and still more in their offspring, and in the destruction of family life. If the present rate of mortality goes on, what will be left of the next generation, and who will compose the future population of the metropolis? It is simply a problem in elementary arithmetic, as is apparent from the following figures:

Total deaths in 1886...............37,000
" births " (est.)..........30,000
Deficiency.................... 7,000

The great increase in the population of the metropolis is therefore drawn from outside the city, and is not a natural growth. It is largely made up of a low grade of foreigners, (Italians, Russians, and Bohemians,) and these will constitute the future citizens of the republic. The immigration statistics show that the greatest increase in recent years has been among the Italian immigrants, who are the least desirable and least cleanly people who make up the worst class of tenement population.

As is shown by the following table the proportion of deaths in tenements to the total mortality is steadily increasing:

Year.	Total deaths.	in tenements.	Per cent.
1876	29,152	15,239	
1877	26,203	13,763	
1878	27,008	14,354	
1879	28,342	15,055	
1880	31,937	17,667	45
1881	38,624	21,171	55
1882	37,924	21,690	55
1883	34,011	18,359	54
1884	35,044		
1885	35,682	19,801	56½
1886	37,351		

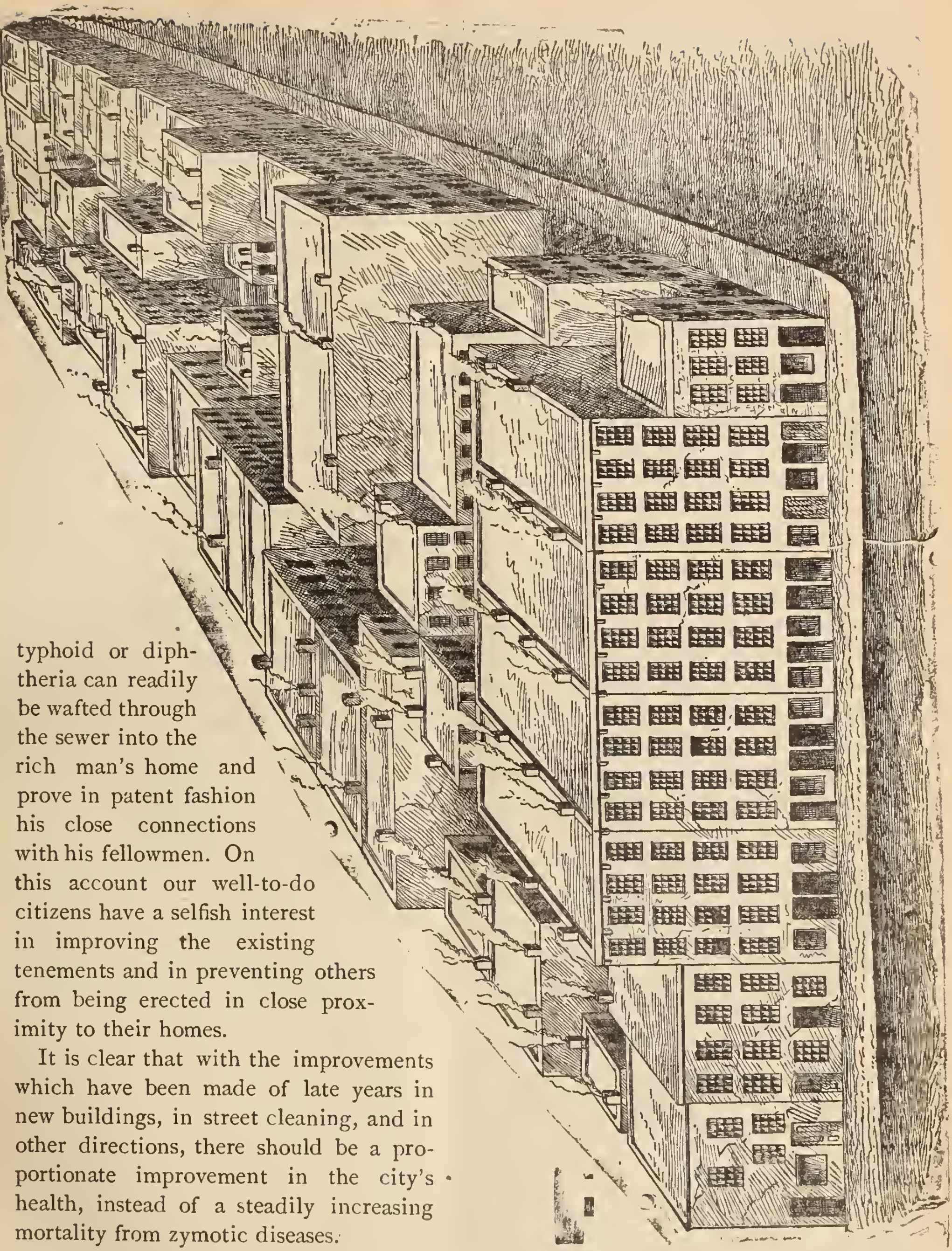
COMPARATIVE MORTALITY OF ADULTS AND CHILDREN.

Year.	Under One.	Under Five.	Total Deaths.
1880	8,725	14,650	31,937
1881	9,691	17,787	38,624
1882	9,867	17,520	37,924
1883	8,668	13,856	34,011
1884	9,636	15,272	35,134
1885	9,303	15,267	35,682
1886	9,850	16,121	37,351
	65,740	110,423	250,665

More than one-half of the total deaths during the past seven years were children under five, and nearly one-fourth were under one year. The total births were about 200,000 for the same years, so that the small number of children who survive is thus apparent.

UNDESIRABLE NEIGHBORS.

Formerly the worst and most crowded tenement districts were found below 14th street, at a distance from the homes of the well-to-do and middle class. But now the eastern and western sections of the city up-town, including all the numbered streets, are packed with tall double-deckers. While these are somewhat better planned than the old style of tenement, they have been mostly constructed by "Buddensick" "skin" builders on speculation, and they are in many cases centres of disease. There are a number of local centres covered with bad tenements on the west side from 34th street to the Central Park, which are as bad as are to be found anywhere, with a phenomenally high death rate. These tenements in many cases drain into the same street sewers which connect with Murray Hill mansions. The contagion from a case of



typhoid or diphtheria can readily be wafted through the sewer into the rich man's home and prove in patent fashion his close connections with his fellowmen. On this account our well-to-do citizens have a selfish interest in improving the existing tenements and in preventing others from being erected in close proximity to their homes.

It is clear that with the improvements which have been made of late years in new buildings, in street cleaning, and in other directions, there should be a proportionate improvement in the city's health, instead of a steadily increasing mortality from zymotic diseases.

The Tribune last year sent 8,336 children away from the slums for a fortnight's vacation in the country, a noble work of benevolence, while St. John's Guild and other charities gave many thousands more shorter trips and excursions down the bay or to the sea side. But where do we see any results in a reduced death rate from these philanthropic efforts. The city's streets are swept as they never were cleaned in former years, and tons of refuse are daily removed, but where are the results from these reforms?

The health authorities report that plans of some 5,000 new tenements have been accepted by the Board, within a few years, and buildings to accommodate some 300,000 persons have been erected under official supervision. This increased accommodation should result in a greatly lessened death rate, unless these so-called "model tenements" are mere make-shifts.

The mortality statistics of London show a steady lowering of death rate, amounting to about 20 per cent. during the last quarter of a century. The average rate during the ten years following 1860 was 24.4 per 1,000; from 1870 to 1880 it was 22.5, and since 1880, only 20 5, the rate in the last year having been so unprecedentedly low as 19. There is no reason why a like improvement should not have taken place in New York City, excepting the inefficiency of the sanitary authorities.

REMEDIES.

The efforts to deal with the tenement problem in the United States may be classed under several heads. First, by the passage of health laws forbidding the maintenance of nuisances in tenements and requiring changes in their structure, such as the cutting of transom windows, opening light shafts, cleansing vaults or converting them into school sinks, and in other ways seeking to lessen existing defects. The chief obstacles everywhere met with in enforcing such laws have been the lack of competent inspectors, the indifference of the public and the opposition of politicians and property owners; and, lastly, the difficulty of obtaining necessary funds for sanitary work. These influences chill the ardor of the most earnest health officer. Their pay is too small to always satisfy men of the first quality, either as heads of departments or as subordinates, and, were it not for the support given by the press and the fear created by occasional outbreaks of disease, far less would be accomplished. Much benefit has followed sanitary restrictions upon the construction of new buildings, especially in New York and Brooklyn, where the plans of all houses have to be approved by the health authorities. Extensive improvements have, also, been made in existing tenements by cutting light shafts, transom windows, putting in pumps, and in other ways. A few model tenements have been erected, those built by A. T. White, in Brooklyn, being most commendable in their results, while Miss Octavia Hill's example has been imitated with success by Miss Ellen Collins and others. Yet, no attempt has been made until recently to deal with the tenement question as a whole. In 1885, as an outcome of a series of eloquent lectures by Prof. Felix Adler, a commission was appointed by the New York Legislature to investigate the tenements and lodging-houses of the Metropolis. The facts collected by this commission, and the conclusions contained in its report, should lead to practical measures of reform, not only in this, but in other States.

In the spring of 1887, through the backing of the Central Labor Union and the Knights of Labor, important amendments to the Tenement House Law were adopted by the New York State Legislature, by which increased powers and resources were given to the Board of Health, and similar enactments have since been introduced into the legislatures of other States. A still more important law was passed by the New York State Legislature, appropriating one million dollars annually for the purpose of tearing down some of the worst tenements, and converting their sites into small parks for the benefit of the neighborhood.

Other and more stringent measures are in contemplation to restrict the erection of any tenement to accommodate more than a fixed number of tenants, say two families on a floor 25 x 100 feet in area.

Public sentiment is gradually being educated to appreciate the need of such vigorous action in sanitary affairs. The presence of cholera may assist to this end, and our people must in time recognize the need of clearing away the slums in our great cities, at no matter what cost. Open air excursions, seaside trips and house-to-house visitation, by a summer corps of physicians, have contributed to alleviate the suffering of the poor. Nevertheless, all that has been done is only palliative, and does not supply relief for the defects in the mass of old tenements, and especially in the crowded double-deckers, with their vast population, bereft of sun and air, or to the hundred of rear houses, so jammed together as to touch each other. To deal adequately with these conditions large and sweeping measures are required.

Tenement houses have been multiplying on Manhattan Island for many years. They are not all bad, but the system is full of evil, and it is time to cry, Halt! and put a check to it. We cannot afford to keep on building "double-deckers," and letting the old tenements remain unchanged, so long as they ruin so many lives, and create such a crop of disease, degradation and death. The tenement system is a monstrous social evil; no one denies this. But it has kept growing and growing, until its very magnitude is an obstacle to reform. Nothing but broad, deep and comprehensive measures will serve to deal properly with it. The city keeps growing, houses multiply, population thickens, and children die by thousands from what are ironically called "preventable diseases," and nothing is done to stop it. It must be dealt with on business principles, as a matter of public safety, not sentiment. It is work for the police rather than the philanthropist.

It is frequently asked if you clear out the slums and create small parks, you will raise rents, and where will the dispossessed tenants find accommodation. In answer to this, I point to the hundreds of new tenements built of late years, and now building in all parts of the city. These will accommodate many thousands of people, and others will be built as fast as there is a demand from those persons who do not care to remove to the suburbs. With the new ferry to Thirty-Sixth street, opening up the region between Gowanas and Bay Ridge, with Staten Island being rapidly developed through the energy of Erastus Winans, and with the cheap acres of land in Astoria, Long Island City, and the new wards, there need be no fear of lack of space for our future population.

As a fact, also, the present rents charged in the wretched rear rookeries are nearly as high as those in the good houses. As to the rents being advanced, that is a mere matter of supply and demand. But the experience of Mr. A. T. White's model houses in South Brooklyn proves that decent and comfortable rooms can be provided for the poorest washerwoman and pedler at rents within their means. Miss Ellen Collins asks no higher rents in her model tenements than her neighbors. The main thing necessary is to insist that the poor shall have decent and wholesome accommodations for the money they pay, and that landlords shall not claim a fixed profit at all hazards.

HINTS ON THE CARE OF THE MIND AND NERVOUS SYSTEM.

BY CHARLES K. MILLS, M. D.,

Professor of the Diseases of the Mind and Nervous System in the Philadelphia Polyclinic and Neurologist to the Philadelphia Hospital.

[*Concluded from page* 11.]

Avoid all morbid thinking. It is a curious fact that a large number of individuals are engaged almost perpetually in a process of vague thinking. The remarks which I have made about reading apply with equal force here. Just as we may have vague, diffuse, and morbid reading, so there is a large amount of vague, diffuse, and morbid thinking. In a recent book of fiction, I read of a character who is described as one who never thought except when he spoke. That is, of course, an extreme statement, but an approach to this condition is desirable in many cases. The majority of men, young and old, are doing much morbid thinking all the time, and this is of decided disadvantage to their general mental health. In other words, just as you should cultivate exact, careful, analytical methods of reading; just as, with the pen in hand, you should read and analyze what you have read to determine how much you have incorporated in your mental structure, so you should get into the habit of thinking definitely about definite, healthful, legitimate subjects. By doing this, you will be surprised at the amount of mental improvement which you will make. At least, one or two forms of insanity may result from bad habits of reading and vague habits of thinking.

The next hints and suggestions which I give are with reference to self-study. This is perhaps not the best possible term, but it is the only one that came to me while thinking over this lecture. What I desire to impress on you is the importance of studying your own possibilities. Study also your own limitations. Much evil results to the mental health and development of young men, from the fact that they do not carefully study these possibilities and limitations. They seek, perhaps, a certain success; they aim higher than is possible for them to reach, under the circumstances, and waste strength in useless effort. Much is within their reach; more is within reach by keeping at their possible level. We need, in this study, to consider our inheritance, and we should face a question of this kind manfully. The majority of us can find in our direct or collateral ancestry some peculiar defect or disease; it may be insanity, it may be epilepsy, it may be drunkenness, or it may be some particular line of constitutional disease. Whatever it proves to be, it is well for the young man, in choosing his career, and in pursuing his direct and collateral work, to inquire carefully into his inheritance. By doing this, he will often be able to so guage and control his work and desires as to lead a useful and successful life, instead of breaking down under the strain which he imposes upon himself. Counsel is often necessary in a matter of this kind, but, to a certain extent, each one can study out the question for himself.

Worry is mental friction. A vast amount of mental work can be done, if performed without too much friction, just as a good machine will work on almost perennially so long as it is kept in good condition for work. Cultivate habits of not worrying and avoid causes which particularly lead to worry. It is interesting to hear the different statements and opinions given by individuals as to the cause of worry. That which in one individual is as nothing, is in another of mountain magnitude. True overwork whether physical or mental is, I think, comparatively rare; at the same time, I firmly believe that it does occur. I believe that a young man can overwork himself mentally and physically. A young man, particularly if he is engaged in business calling forth a large amount of physical and mental exertion during the day, should avoid plunging into a work in the evening which calls forth the same strain and attention. It is always well to make a change. A change is rest to the mind under these circumstances. Those who during the day are to a large extent concerned with manual labor would do well in their evening occupations to look to some intellectual work. Those who are engaged as clerks, as bookkeepers, and students should turn to manual training schools, and occupations of that kind, in order to keep up the best balance of mental and physical health.

The general question of physical exercise will be discussed in another lecture in this course. The one point which I wish to make is that for the best mental health, a proper balance between physical and mental exercise should be maintained. Every muscle or group of muscles has a distinct representative in the nervous system, to a certain extent in the spinal cord, and to a better determined and known extent in the brain itself. We have a modern phrenology which is a genuine science far beyond that of Gall and Spurzheime. This science teaches us that for every special muscular movement, and for every group of harmonious movements, there is in the brain a centre, a region, or a zone, connected in a governing or controlling way with these movements. Lombard and others have performed experiments showing that extreme muscular movement of one part, say the right arm, has its response in a rise of temperature in a certain region of the skull on the opposite side. Experiments on blood pressure show that a change in the circulation takes place within the skull after every particular movement vigorously performed. In other words, a brain response can be called out by muscular movement. According to the vigor or the complexity of the movement will be the extent of the response.

Last year a highly instructive experiment, bearing upon the questions which I am now discussing, was performed at the New York State Reformatory, at Elmira, New York. Dr. H. D. Wey has published an interesting account of this experiment in the annual report of this Institution. A class was formed, consisting of twelve men, who, for a period ranging from one to two years, had made no appreciable progress in their school work, and who seemed incapable of any prolonged mental effort, yet could not, strictly speaking, be considered as mentally unsound or representatives of a class known as feeble-minded. The following quotations from this report will give some idea of the results obtained:

"The object which led to the formation of the class was to ascertain, if possible, if physical culture, as comprised in frequent baths, and massage, and daily calisthenics, under the care of a competent instructor, would not result in at least a partial awakening and stimulation of dormant mental power.

"The class was an experiment from its formation, and no pre-conceived ideas as to the results to be reached were entertained, or that each dullard, by a process of physical gymnastics, was to be converted into a scholar. Increased mental activity, rather than muscular development, was to be the guage of the success or failure of the experiment during the five months the class was to receive its course of special training."

Details are given as to the age, offences for which convicted, terms of imprisonment, habits, occupation, environment, moral susceptibility, and physiognomy. Among the twelve there was not a face that did not express mental habitude or moral obliquity.

"The plan proposed to be followed, in connection with the class, was the substitution of a special dietary for the regular prison fare, and the weighing out of each of his rations, that all might fare alike, and be observed under precisely the same conditions. The school work of all was to be continued to a common course, the more advanced being put back to the level of the lowest, which could easily be done without prejudice to the former. The physical part of the program is to be embraced in baths at frequent intervals, and with regularity in conjunction with passive exercise, as kneading the muscles, working the joints, and friction applied to the whole body through rubbing by a professional trainer employed in the Turkish baths; and, later in the day, a manual drill and calisthenics to furnish exercise, and supplement the routine task hitherto daily performed in the shop."

"With physical culture and improvement there came a mental awakening. For five months preceding the experiment the average marking of the twelve men in school work, according to the school register, was 45.25 out of a possible 100, and during the five months of the experiment, 74.16. Figures are misleading and statistics frequently express nothing. The measure of improvement in these twelve men can hardly be expressed in numbers, but must be judged rather by the work they accomplished than by a numerical scale. The acquisition of mere book learning was not so much an object as to determine if physical culture in men of coarse fibre and blunted sensibilities could not be made a means to mental effort and awakening. To those of us who are thrown in daily contact with the men a mental awakening was apparent, and, upon the whole, the results obtained were as great as we had reason to expect."

You cannot make a poet or philosopher by hammering at a bag, or swinging a club, or lifting a weight; but you can improve even a poet or philosopher in this way, and can bring up some of smaller mould to higher possibilities. While certain parts of the brain are concerned with muscular movements, other regions higher in physiological and psychological sense are concerned with attention, with inhibition or control, and with conscious perception; but all portions of the brain, as I happen to know from experiments of my own, are, more or less, connected in circulation. We have a distribution of vessels to an anterior area, another to the middle, and a third to a posterior area of the brain; but there is, as we say, technically, an anastomosis or interlacing of many of the branches of these different distributions. This fact points to a portion of the explanation of the general improvement in the brain resulting from carefully regulated physical exercise combined with intellectual work or training.

That the brain needs sufficient sleep, in order that it may do its best work, goes almost without saying, yet it is sometimes well to repeat well-known facts. As to the amount of sleep which an individual requires in order that the brain may be in the best working condition—that it may respond best to impressions from without and from within—there may be some difference of opinion. Some can do with much less sleep than others. It is fair to say that, as a rule, growing young men require from seven to nine hours' sleep. In the majority of cases seven or eight hours' sleep are absolutely necessary for good health. You may read in history of some great general going for weeks during a campaign with only one, two, or three hours sleep daily, and you may have met with such exceptional cases in your own experience; but good sleep and plenty of it are necessary for the best preservation of the mind. In the first place resist the beginnings of sleeplessness. Of all serious symtomatic disorders which doctors are called upon to treat, sleeplessness is one of the most difficult to manage. In the young it is much more readily overcome than in the old. If a young man finds that he is becoming sleepless, he should seek for the cause. With some it is the too eager pursuit of an intellectual occupation close to the time for sleep. It is well fifteen minutes or half an hour before retiring time to take up some other matter. Often it is some physical condition which in young people leads to this habit of sleeplessness. I have only time to press upon you the importance of seeking out the special cause in each case.

Sexual abuses and excesses should be avoided by those who would keep the mind and nervous system sound. Much harm has been done by quack literature on this subject. The strongest human passion is evidently that connected with the sexual portion of our nature. It is that which in spite of ourselves often rises to strike and maim us. If a young man pressed by this passion can, by a process of mental discipline, repress desires, he will do more to strengthen his mind than by almost any other way. He will have accomplished a great victory. On the other hand, do not get into a morbid way of thinking about such abuses. I have seen many sexual hypochondriacs, and sad victims of sexual phobias.

Avoid the company of dissolute women. I say this from the physician's as well as from the moralist's point of view. If you will go with me to my wards in the Philadelphia Hospital, you will see in one bed a man with horrible head-pain, half blinded by inflammation of his optic nerves, paralyzed it may be in one arm, and a victim of occasional terrible convulsions. You will see, in another bed, the palsied, the atrophied and the contracted limbs of an individual suffering from spinal disease. In the Insane Department, you will find cases of general paralysis of the insane, of acute mania, and of all manner of dementia; and a large proportion of these cases, particularly as you find them in large public institution, are due to the monster syphilis, who dwells in the company of dissolute women. Let this be a hint and a lesson to you with reference to preserving yourselves against contagion and disease. I think that scarcely a better lesson could be given than to take young men at times through the wards of a hospital of this kind, and in a plain way point out the suffering there to be seen and trace for them the way in which this suffering has resulted from the neglect of such suggestions as I have just now given.

PHYSICAL CAUSES FOR MENTAL DISEASES.

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In the study of general bodily maladies, it is the custom of the physician to carefully investigate the diseased conditions of the organs or tissues affected. Through this study of morbid physiological processes, he arrives at a clear understanding of the cause of the disease.

Now, in this paper, I wish to maintain that insanity is simply a bodily disease, in which perverted mental action is a symptom, and that, in its study and treatment, the physician should follow the same method of inquiry and practice as he adopts in investigating other corporeal diseases.

Our friends, the scholarly metaphysicians, have thrown us off our guard. They have been telling us so much about the mind, and have endowed it with such marked and multiplied attributes of individuality, that we are almost ready to consider this physical life simply as an unimportant or morbid appendage to our mental personality. In philosophically studying the mind as an abstraction, we are losing sight of the fact that, however exalted its attributes, it has its local habitat in the human body, and that its integrity and powers depend on the physical and physiological status of the organ through which it acts. A century ago, a distinguished French physician, Cabanis, wrote that "the brain digests impressions and organically secretes thought." And again he says, "As the liver secretes bile and the stomach gastric juice, so the brain secretes thought." These are very materialistic announcements, which all the scientific studies and experiments of the past century have not substantiated. Yet, as a practical, working formula, which should direct every physician and hygienist in their labors to restore or preserve mental action, these words are fraught with significant instruction. I do not subscribe to the thought-secreting theory, but I do most emphatically assert that as healthy gastric juice cannot be secreted by a diseased stomach, so healthy normal thought cannot emanate from a diseased brain. And, further, as unhealthy gastric juice pre-supposes an organically or functionally diseased stomach, so abnormal mental action presupposes an organically or functionally diseased brain or nervous system. As physicians and hygienists, we must regard the body and mind as correlative. Let the metaphysicians proceed with their learned systems and abstruse speculations, but let us address ourselves to the more material and more practical consideration of that physiological question, "a sound mind in a sound body," and, being aided by a careful study of diseased conditions in brain and nerve tissue, so compare, analyze and differentiate, as to establish a system of mind and of mental conditions as will be of immediate and great practical value, both in the prevention and cure of insanity.

In order to make myself as clear as possible in my belief in the somatic or bodily origin of insanity, I will pass in brief review some of the evidences which lead to this conclusion. In the fretfulness and general nervous irritability of children in fevers, gastric irritations and during teething, are seen the facility with which the brain and nerves are influenced by bodily conditions. In many of these cases delirium, convulsions and hallucinations of the various senses occur. In ordinary cases of typhoid fever the intellectual centres are so profoundly depressed that the testamentary capacity of the patient is often abolished, and in a number of instances the wills of typhoid fever patients have been annulled by the courts. In making this statement I do not only refer to those cases of nervous typhoid, par excellence, where the nervous and mental symptoms are so marked, as indubitably to point to a serious involvement of the higher nerve centres, but to those more ordinary cases, where, although the delirium is hardly apparent, yet the patient's mental processses are considerably impaired, so that he does not properly realize his surroundings, nor does he manifest any particular interest in his recovery. He will answer questions briefly, cannot become engaged in extended conversation, and has no real intellectual appreciation of any matter proposed for discussion. In such cases, after recovery, a considerable portion of the period of sickness is a perfect blank, and any business transacted during that time cannot be remembered. Who does not know of the mental irritability of the chronic dyspeptic? Whether this disease is due primarily to abnormal action of the digestive processes, or whether, as is maintained by some, its cause is deeper laid in degenerative changes in the brain and nervous system, the somatic origin of the resultant mental perversities is still apparent. The depression of spirits which accompany congestion of the liver is familiar to every physician. Even changes in the weather will convert your most cheerful friend into a melancholy misanthrope. The mind stands exposed to the darts of its casual adversary on every side, and in no point and from no direction can it be considered invulnerable.

Now, the proposition here maintained is, that insanity is simply an extreme expression of these same depressions, irritabilities and mental vagaries which characterize us under common ailments or conditions. And, furthermore, it appears that mental disease is always symptomatic of functional or organic morbid changes in the brain or spinal cord, operating either primarily from the cerebro-spinal centres, or reflexly from other organs or tissues.

The more recent classification of mental diseases recognizes its somatic or bodily origin. The nomenclature adopted by the Royal College of Physicians of London, in 1885, accepts those well-established forms of mental states depending on conditions of excitement, depression, exaltation and fatuity; and also assigns three general divisions under "Causes dependent on bodily conditions," viz.: "Period of life, external causes, and diseases of the nervous system." It is well no doubt to retain the old names, which indicate the special mental states, for, with the same exciting cause, these states often vary in different persons; as, for example, in insanity due to epilepsy there may be either a condition of mania, melancholia, dementia, imbecility or idiocy. In this classification both the mental and somatic schools are recognized, and an important step made towards the final transition. That bodily conditions find room in this new nomenclature shows the trend of English thought on this subject, and England is the nation which furnishes the leaders in this department of medicine.

I wish now briefly to state a few of these "causes dependent on bodily conditions." In doing this, I shall cull examples from the actual experiences and observations of physicians who have made special researches in this field.

A miner in Nevada became so stimulated from inhaling lead fumes, whilst repairing one of the tunnel fume escapes, that, had he not been immediately secured, would have killed three men standing near him, with a sledge hammer. The patient having been removed to the open air the attack disappeared. The patient's ancestral history showed a tendency to nervous diseases.

A number of cases of quinine intoxication are reported, occurring during a moderate use of the drug. Genuine attacks of mania, melancholia and dementia are described. After recovery in these cases, small doses of quinine would cause a recurrence of mental symptoms. Family histories indicated great nervous irritability.

Heart disease is an important causative factor in insanity. In a prize essay by Dr. Duncan Greenlees, an eminent English alienist, this subject has been carefully investigated. Of the twelve conclusions arrived at, I will here quote three:

1. "Heart disease occurs with greater frequency among the insane than among the sane.

2. "Among the sane, heart disease appears to exercise an important influence on the mind, changing the temperament and altering the character of the patient, and this change may become so prominent that the psychical phenomena exhibited may be those actually of insanity.

3. "Not only does heart disease alter the type and delusions of insanity, but also some cases occur among the insane, in whom the only ascertained predisposing cause of the mental aberration is the diseased condition of the heart, or general derangement of the circulatory system, and that in these cases the cardiac lesion is, no doubt, the predisposing cause of the insanity."

In reference to the blood of the insane, carefully conducted experiments by the eminent Dr. Rutherford Macphail, of England, lead him to formulate fourteen conclusions, of which I will give four:

1. "While there is no evidence to show that* anemia, in itself, is a cause of insanity, yet an anemic condition of the blood is undoubtedly in many cases intimately associated with mental disease.

2. "The blood of the average number of patients on admission into the asylum is considerably below the normal standard.

3. "In patients who recover, the quality of their blood improves during residence in the asylum, and on discharge is not much below the normal standard.

4. "There appears to be a close connection between gain in weight, improvement in the quality of the blood and mental recovery."

In this same connection I wish to refer to the conclusions of another capable observer, in his study of a large number of cases of melancholia, in its relation to diminution of the oxygen supply. In seventy-five per cent. of the cases studied, he found either that the blood itself was impoverished, or that the state of the respiratory or circulatory apparatus was such as to prevent the blood being properly purified whilst passing through the lungs. The conclusion is, that a deficient supply of oxygen to the brain was the cause of the melancholia. Even the events of every day life will bear this out. After a day or a week of close confinement in an unhealthy room, resulting in a low and desponding state of mind; a condition of disgust with things in general; how a walk or a ride in the pure air outside raises our spirits.

In regard to those delusions, hallucinations and illusions which so generally characterize the insane, it is believed that they are in some measure explained by the morbid excitation of those centres where the impressions from the senses are received, and localized in certain portions of the gray matter of the brain, as described by Ferrier and Hitzig. Disease in the distribution of these nerves of special sense may also be considered as having a causative relation. Wrongly interpreted or false images, initiated impressions from the sense of smell, or of taste, and the numerous perversions of hearing, appear to be thus satisfactorily accounted for.

There is an insanity of Bright's disease due to the presence of urea and other abnormal products in the blood.

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* Dr. Clouston, in his valuable work on Mental Diseases, mentions anemic insanity as a form and details cases.

On account of the degenerative changes going on in the kidneys, these poisons are not eliminated from the system. An eminent Italian physician details many well marked cases, in which certain maniacal disturbances, and certain deliriums, combined with hallucinations of sight and hearing, were due to the vicious influence of this poison in the brain and central nervous system.

It has been shown that an important relation often exists between tuberculosis of the lungs and insanity. In insane consumptives, the mental disease shows a decided tendency to become chronic, the acute stage being of very short duration and rarely terminating in recovery. In many cases of diabetes, there exists a specific mental disturbance, characterized by depression and occasionally leading to suicide. (TO BE CONCLUDED.)

Special Reports.

SPECIAL MEETING OF THE STATE BOARD OF HEALTH.

A special meeting of the Board was held Wednesday, January 11th, 1888, at the executive office, at 12.45 P.M., on the call of the President.

Present—Drs. Engelman, Dudley, Edwards and Lee. The President, Dr. Engelman, in the chair.

The Secretary stated the first business before the meeting to be the consideration of an invitation received from the officers of the Committee on Legislation of the National Pure Food Movement, to send delegates to the National Pure Food Convention, to be held in Washington, January 19th, 1888, the number of delegates not to exceed three. On motion of Dr. Dudley, the following named members were appointed delegates, with expenses paid, viz.: Drs. Engelman, Edwards and the Secretary.

Nominations for inspectorships being in order, Dr. G. C. Mohn, of Laurelton, Pa., and Dr. Wm. Leiser, Jr., of Lewisburg, were nominated to fill the vacancy in the Northumberland District, caused by the appointment of Dr. Groff upon the Board. Dr. Leiser was elected.

Dr. Müllhaupt, of Erie, and Dr. J. L. Stewart, of Erie, were nominated for the Lake District, including the counties of Erie, Crawford, Warren, Mercer, Venango and Forrest. Dr. J. L. Stewart was elected. Dr. Charles McIntire, Jr., was then nominated for the Lehigh Disirict, including the counties of Lehigh, Northampton, Carbon and Monroe, and was elected.

The Secretary then stated that it was of importance to determine where the next regular meeting of the Board should be held, and to select an individual to deliver the annual address. He had been in correspondence with Dr. Groff as to the possibility of holding a sanitary convention at Lewisburg in connection with the meeting, and read a letter from that gentleman favorable to such an arrangement, and briefly sketching a plan for a convention. On motion it was decided that the next place of meeting, for the stated meeting to be held in May, should be Lewisburg, and that the Secretary and Dr. Groff should be appointed a committee to arrange for holding a sanitary convention at that time. The Secretary was instructed to communicate with prominent gentlemen with a view to obtaining some one to deliver the annual address; and on motion of Dr. Dudley, it was resolved that, with the acquiescence of such person, the subject of said address should be, "The Importance of a Thorough Organization of the State in the Interest of the Public Health, Under the Authority of Law." The Secretary then offered the following resolutions.:

Resolved, That this Board endorses the recent action of the Board of Health of the city of Philadelphia in promptly isolating the individuals affected with leprosy.

Resolved, That it is irrational to suppose that transportation to America will deprive this disease of its well known infectious character; and, therefore,

Resolved, That leprosy be placed upon the list of *communicable diseases, dangerous to the public health*, in the "model ordinance for the better preservation of the public health in cities and boroughs of Pennsylvania;" and, further, "that all boards of health, sanitary committees and borough councils throughout this State, be enjoined to class it among the diseases required by law to be reported to the sanitary authorities." The resolutions were, on motion of Dr. Edwards, adopted.

The Secretary then proposed the following additional regulation to be appended to the "Regulations in regard to the Disinterment and Transportation of Dead Bodies:" All DISINTERMENTS shall be done during the day, and the superintendents of all burial grounds, cemeteries and church-yards in this commonwealth are prohibited from allowing any dead body to be exhumed, removed from, or interred in their respective grounds, between sunset and sunrise. The regulation was approved.

The Secretary then presented a report from Inspector E. D. Payne of an inspection of filthy slaughter-houses in Covington, Tioga County. The Secretary sent instructions for the abatement of the nuisance in accordance with the recommendations of the inspector in July last, but the action had not been reported to the Board at the November meeting through oversight. He asked the approval of the Board of his action, which was accorded.

Vouchers No. 186 to No. 194, amounting to $431.28, which had been audited by the Executive Committee, were presented and approved. Dr. Edwards presented a complaint from Dr. William Hunter, of Blairsville, of the insanitary condition of parts of that town. It was referred to the Secretary for action according to his judgment. On motion, the Board then adjourned.

BENJAMIN LEE, *Secretary.*

REPORT ON MALT EXTRACTS.

PHILADELPHIA, January 1st, 1888.

DR. J. F. EDWARDS:

Dear Sir:—In the examination of the malt extracts, the results of which are herewith attached, I have been guided by the principle that the essential value of these articles is dependent on their capability of fulfilling the indications for which they are used in medical practice. I have considered that a general analysis, including the amount of albuminoids, etc., would be less practical than tests of their efficacy as diastatic agents and of their freedom from injurious additions, with a view to preserve them. I have, therefore, tested them for alcohol, salicylic acid and diastase. The examination of the diastatic activity of malt and malt extract has been studied by several observers, among others Dr. Coale, of Baltimore, who has shown that to get an absolutely quantitive estimation it is necessary to determine the amount of sugar formed, and to use a starch solution especially prepared. In the present examination I have found the activity of the various extracts distinguished by such characters that I have found a comparative method sufficient. I have used the process recommended by Allen, one of our best authorities in this field, and described in the last edition of his work.

I feel assured that a malt extract which will not give a full diastatic effect by his test is to be condemned as inactive. To the liquid extracts, the addition of some preservative appears necessary, and as this is generally alcohol, to the extent of from 2 to 4 per cent., such preparations are practically beers, and should be considered as such. The addition of salicylic acid, which has now become so frequent in all perishable articles, is also to be condemned on general sanitary grounds:

No.			
1.	Alcoholic,	Salicylic acid,	No diastatic power.
2.	"	None,	" "
3.	"	"	" "
4.	"	"	" "
5.	"	"	" "
6.	"	Salicylic acid,	" "
7.	No alcohol,	None,	Good diastatic power.
8.	Alcoholic,	"	No diastatic power.
9.	No alcohol,	"	Good diastatic power.
10.	"	"	" "
11.	"	"	" "

The addition of salicylic acid merits a special consideration. While observations, notably those of K. Lehmann in Munich, have shown that no evident injury occurs to healthy individuals under a long course of this body, yet all sanitary authorities are opposed to its use in food because of the uncertainty that still attaches to its effects. According to Allen, it prevents the action of diastase, and would therefore be especially inapplicable in a malt extract; but a few experiments made with the most active of the above samples—No. 9—showed that the diastatic action of this preparation was not impaired, even when small quantities of the acid was added. This point will be further examined. The quantity of salicylic acid in No. 6 is quite large.

It appears then that the only truly active extracts among the samples submitted are Nos. 7, 9, 10 and 11, these all being solid or semi-solid forms, while the others are, as remarked above, practically identical with malt liquors.

Respectfully submitted,

HENRY LEFFMANN.

KEY TO ABOVE REPORT.

No. 7 is the Troemner Extract of Malt.
“ 9 is Maltine.
“ 10 is Horlick's Malt.
“ 11 is Granulated Malt of the Malto-Cocoa Co.

Thus, then, if one wishes to use an extract of malt that will fulfill the conditions for which malt extracts are intended, he must use one of the four above mentioned, bearing in mind that No. 9 (Maltine), is the most active of all as a diastatic agent. We have purposely refrained from publishing the names of the seven malts not worthy of commendation. These four will accomplish the purpose for which such articles are intended, and by exclusion our readers can infer that the others, while as mild alcoholic reconstructives they may not be objectionable to many minds, cannot be recommended for the specific object aimed at in a malt extract.

◆

A NEW WAY TO PURIFY WATER.

"PITTSBURGH, Jan. 21.—Probably one of the most useful and interesting discoveries of the century has just been perfected and put to practical use by Professor Hugo Blanck and R. W. Smith, of this city. A method of thoroughly purifying water by the passing of electrical currents through it has been subjected to the severest tests, the results leaving no doubt whatever as to the effectiveness of the invention.

The passage of the electric current through the water kills all germs of disease that it may contain, also leaving it clear of any impure substances. The experiments were made with water taken from the Monongahela River in the vicinity of the sewer escapes. After being electrified, only the purest water flowed from the specially constructed tank. Applications for patents have been made."

The above extract was published in the Philadelphia *Press* of January 22. As it seemed to us a question of vital interest, we wrote to Captain Crosby Gray, the health officer of Pittsburgh, asking him to investigate the report. We append the correspondence which this request elicited:

PITTSBURGH, Jan. 25, 1888.

DR. J. F. EDWARDS. *Dear Doctor:* Yours of the 22d received. I have referred it to my friend, R. H. Smith, Esq., one of the parties interested in the experiments now being made, who will write you fully. Hastily, yours,

CROSBY GRAY.

DR. JOS. F. EDWARDS:

Your respected favor of 22d inst., addressed to my friend, Capt. Crosby Gray, Health Officer of our city, has been sent to me for particulars.

The discovery mentioned in the enclosed clipping is the result of the investigations which have been pursued for months by the respective Boards of Health of our two cities (Pittsburgh and Allegheny), especially the first named. They found the water, from one of our sources of supply—the south side—was so impure and full of disease germs that it was unfit for domestic use, and they therefore condemned it. They then employed scientists to devise ways and means to correct the trouble.

It was found that filtration did not remove the difficulty, and that the only safe thing that could be done was to boil the water for quite a long time. This could not be done practically on a large scale. These investigations led me to suggest the charging of the water with a strong current of electricity for the purpose of destroying any and all animal life that might exist in it.

With the assistance of Dr. Hugo Blanck, Chemist of our Western Penna. Medical College, we took various samples of water to the Westinghouse Electric Light Co.'s works and there charged these various waters with fairly strong currents of dynamic electricity.

The water, before being used, was very carefully examined by the use of a powerful microscope, and was found to be full of all kinds of animal life, disease germs, etc.

The water, after being charged, was carefully covered so as to prevent any contamination from the air. It was thus kept for fourteen days and again microscopically examined, when not a sign of living animalcule or disease germs could be found in it, while samples of the water retained, but not charged, showed up as full of life and disease as it did when first examined.

We have not yet finished all our tests, and regret that any publicity has been given to what we have already accomplished, but we have gone along far enough to satisfy ourselves of the effectiveness of them, and we intend, after making futher tests, to put our method into practical public use, providing our future tests result as satisfactorily in every particular as those already made. With respect, I remain, Yours truly,

ROLAND H. SMITH.

Thus it will be seen that the health officer of Pittsburg, so to speak, vouches for Mr. Smith and Mr. S., himself, tells us about this valuable discovery, so that it would seem that we really have made a wonderful discovery in sanitary science, a discovery that is pregnant with wonderful possibilities; a discovery that, if substantiated, will relegate typhoid fever to the class of "*lost*" diseases. We will report further.

A FURTHER REPORT ON BEER.

Having established in our November issue what beers are free from Salicylic acid, we set to work to find which of those so free would be the most suitable, on account of purity and for considerations of nutrition, for medicinal and general use. We therefore requested Dr. L. Wolff to make an exhaustive examination of those beers which we had already found free from Salicylic acid and the following is his report. For the information of those who did not see our November issue, we would say that we there published a report showing that of all the prominent bottled beers in the country only those which we have here examined were free from Salicylic acid. The presence of this acid was enough, in our judgment, to condemn a beer, hence our present final examination was narrowed down to the beers here reported upon:

PHILADELPHIA, PA., 333 S. 12th St.
DR. J. F. EDWARDS:

Dear Sir:—In compliance with your request to furnish you with an analysis of five samples of bottled beer which you sent to me, I submit the following report.

All of the five samples were well corked and contained slips pasted on them which bore respectively the numbers 1,2,3,4, and 5. The analysis was, as you intended, made with a view to test their nutritive and comparative value, and their proper composition.

The process employed was, 1st, the determination of the amount of extractives; 2d, the incineration and ascertaining of the amount of ashes; 3d, the determination of maltose or malt-sugar; 4th, the computation of the alcohol they contained by the specific beer test.

The results are embraced in the following table, the values being given as per cents.

Number.	Extractives.	Ashes.	Sugar.	Alcohol.
No. 1.	6.35	0.23	1.47	2.00
" 2.	4.98	0.21	0.76	3.00
" 3.	6.89	0.23	1.42	2.6
" 4.	5.37	0.24	1.08	1.7
" 5.	7.76	0.25	1.31	3.2

In analyzing the results of this table, I find the following proportions which I again tabulate.

Proportion of alcohol to extractives.		Proportion of ashes to extractives.
Numbers.	Alchl to Extractvs.	Ashes to Extractives.
No. 1	1 to 3.1	1 to 27.6
" 2	1 to 1.6	1 " 23.7
" 3	1 " 2.7	1 " 29.9
" 4	1 " 3.1	1 " 22.4
" 5	1 " 2.4	1 " 31.0

In utilizing these tables for purpose of comparison, a standard would be necessary to be guided by. I hardly think we can adopt a better one than that laid down in a sanitary law submitted for the German Empire, by which it is intended that in a beer of good taste and wholesome composition the proportion of alcohol to extractives should be about 1 of alcohol to 1.75 of extractives, and that beers varying very much from this proportion should not be considered as conducive to health. The amount of alcohol in *Lager beer* should be about 3.5 to 4 per cent. Koenig, as an average of 100 analyses of various beers, gives for winter or draught beers the percentage composition as follows: Alcohol, 2.56; extractives, 4.98; ashes, 0.20; sugar, 0.44; for Summer or Lager beers, alcohol, 3.00; extractives, 5.61; ashes, 0.22; sugar, 0.87. Thus it would appear that my results with some of the beers I have examined correspond closely with the result of Koenig. The average proportion of alcohol to extractives he makes about 1 to 1.8, and that of ashes to extractives as 1 to 25. According to this, and the standard above mentioned, it would appear that No. 2 comes nearest to this amount. The amount of alcohol in all the beers examined, except in Nos. 1 and 4, seems sufficient for light beers, while Nos. 2 and 5 are the two only ones having a sufficient amount according to the standards adopted. The amount of maltose in all of these beers is slightly in excess of the German standard.

In conclusion, I would state that all the experiments in connection with this report were made jointly by myself and my friend and assistant, Mr. W. L. Baum, Ph. G., who with great care and precision conducted the processes under my supervision. Very Respectfully,

L. Wolff, M.D.,
Demonstrator of Chemistry,
Jefferson Medical College.

KEY TO ABOVE REPORT.

No. 1 Munich Beer—Germania Brewing Co. Philada.
" 2 Vienna " " " " "
" 3 Rochester Stock Lager.
" 4 Budweis Lager.
" 5 Champagne Lager Beer.

We feel that this report prossesses a very great value. It has become of late a very common practice for physicians to prescribe beer as a tonic in convalesence from acute diseases, and in various debilitated conditions of the system. Such being the case it is of the utmost importance that we should know what beer will best answer our purposes. Of course, we would not think of prescribing a beer that contained Salicylic acid; hence our former report narrowed down the choice of the physician to one of the five beers discussed in this issue. From a temperance point of view, also, is this report of very great value. If we can induce the people to substitute for the more ardent spirits a mild, well-proportioned, nutritious and unadulterated beer, we have made enormous progress towards the goal of temperance. Such a beer as No. 2 must certainly be a valuable article for the physician to rely upon when he wishes to prescribe for his patients a beer that he can depend upon as a good tonic. The practical meaning of the two reports, which we have published, is that the "*Vienna*" *beer*, made by the Germania Brewing Co. of Philadelphia, is the best of all the bottled beers now offered for sale, and approaches more closely to the standard of an ideal beer than any other on the market.

As hygienic watch-dogs, as it were, standing between the people and those who would offer them articles injurious to health, it becomes our duty to unequivocally and unhesitatingly say what we have said in this report.

VALUABLE REFUSE.

It has always seemed a mistake to us that the refuse of a city should be considered valueless and thrown away. The New York correspondent of the *Phila. Times* confirms us in this belief, when he tells us that New York finds a revenue from its ashes and garbage. Nine hundred thousand cart loads of this refuse is gathered there every year from the barrels of the house-holders. The business of the Street-Sweeping Department is considerably lightened by the labors of five hundred Italian rag-pickers, men, women and children, and one hundred and fifty Italian slaves in the pay of the contractors who pay a price for the pickings from the city's sixteen dumps. These latter find the business singularly remunerative. One contractor, who controls all but one dump, pays the city $2,300 a month to gather rags, bones, bottles, tin cans and old iron from the heaps of refuse. He pays $35,000 a year for labor, and yet his annual profits are estimated at $50,000. The ashes and garbage when gleaned are carried in scows to sea and dumped overboard. None but Italians will engage in this offensive work, but as there are now 25,000 of this nationality in New York, and nearly all of these are slaves of the padrones, their labor is obtained without difficulty.

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Editorial.

TO OUR SUBSCRIBERS.

On the first of the year we sent bills by mail to all of our subscribers whose subscriptions became due on that date. Some have very promptly responded; but the great majority have not yet sent in the small amount. Two dollars seems like such a small amount that we suppose each one thinks that the absence of his two dollars will make no difference. But it is upon the aggregate of these small amounts that the journal must live. We are very anxious to be continually improving "The Annals;" but, to do do so, we must have the means. We would, therefore, respectfully request all of our subscribers who have received bills to kindly remit the amount at their earliest convenience.

THE NEW YORK QUARANTINE.

While, as we have already said, we do not believe that the New York Quarantine is justly deserving of all the terrible censure that has been heaped upon it, yet we cannot think that any reasonable person will question the necessity for a reformation of its methods. Mayor Hewitt, of New York, has forwarded a letter to the Governor in which he states that neither New York city, nor the state, nor any other portion of the Union is free from the dangers of the spread of contagious diseases under the present quarantine regulations at that port. The opinion of the Mayor is based on the report to the Board of Health of the city. He recommends that the Governor submit this report to the Legislature for action in improving the arrangements at Quarantine.

This same opinion is shared in by the New York State Board of Health and by every one competent to form an opinion. There are certain debatable questions, and then again there are questions to which there is only one answer, and the New York Quarantine question belongs, undoubtedly, in the latter category. The politicians of New York have no right to endanger the health of the country, and they should be told so in unmistakable terms. The New York Quarantine must be reformed, and no better model upon which to base the work can be found than the *perfect* system of Louisiana, which we have recently portrayed at length.

A GENERATION OF SANITARIANS.

Some short time since we were visiting the public schools of Shenandoah (up in the coal regions of this State) in company with the superintendent. Entering a room in which there were some thirty children, ranging in age from say six to twelve years, the superintendent asked the teacher in what study the children seemed to be most interested. Without a moment's hesitation the reply was, "In hygiene." The request was then made that this lesson might be substituted for that in progress, that we might see the method of teaching. "Now children," said the teacher, "we will have a lesson in how we ought to live." We wish that every sanitarian in the land could have been present to have seen the expressions of pleasure that passed over the countenances of those children. It may be attributed to our enthusiasm for the subject, but we can assure our readers that we verily believe that no more pleasure would have been evinced had the teacher said, "Now, children, we are going to the circus." What was the significance of this spectacle? It means that those who argue that the masses cannot be interested in hygiene are dreadfully wrong in this opinion. Here we had the children of miners plainly showing that of all their school studies hygiene was, instinctively, the most agreeable. Here were the men and women of the next generation being educated, not only willingly, but cheerfully, in the care of the body. Will we not then have a generation of sanitarians when these little ones come to maturity? Will they not surely, as a result of this education, as a necessary and inevitable result, perpetuate a generation physically superior to what they have been? and will not this gradual growth of a sound mind in a sound body ultimately result in an even higher order of human beings, physically and intellectually, than we now see? Just as surely is this coming to pass as that the sun rises and sets. Let every State in our glorious Union follow the beneficent example of Pennsylvania, and some of our sister States, and by legislative enactments make the teaching of hygiene compulsory in the public schools. Such a law will soon be universal; let every well-meaning person put his shoulder to the wheel and help it along.

Notes and Comments.

"THE NONSENSE OF SCIENCE."

The following remarks from the *Sanitary Era* are so appropriate that we quote them entire:

"A paragraph that is going around contains some plausible nonsense of ignorance about

'THE NONSENSE OF SCIENCE.—Sanitary science has worked much good, but it has disseminated much nonsense. Now it is the manufactured article which is big with the germs of death; now the water; now the air; now the milk. If half that has been written of these subjects were the truth, there would be no further need for agitation. All the people would have been dead long ago. The theory that everything is full of germs of fatality seems incompatible with the fact that people continue to live.'—*Omaha Herald.*

"Seems," dear *Herald*, no doubt, to people who have never noticed the difference between the aggregate of danger and the average of danger. We are sometimes tempted to wish that certain public persons, such as editors and officeholders, who are responsible for the maintenance of impure systems of sewerage, water supply, and other public nuisances, could be made to feel the public danger as a personal danger, by its concentration on themselves. In that case, and in no other, would the most of them stir about to remedy such evils. But so long as only about ten persons in a thousand, or fifty thousand in all our vast land, are slaughtered every year by the filth in water, earth and air, the danger does not "seem" very near to any one in particular, and therefore to wiseacres like the one who penned the above paragraph, the evil "seems" to be greatly exaggerated—simply because they do not think. They are quite content to take their chances with the 49,950,000 people who live out the year or die from unavoidable causes; and who cares for the trifle of the odd 50,000? But what would be thought if our railroads killed 50,000 passengers annually, year after year? Would there be no great danger, and no great need of reform, in that matter? Nor is such the worst practical aspect of the matter. What if one-third or one-half of all mankind were killed, sooner or later, by railroad accidents? That would furnish a true parallel to the fact about zymotic diseases, which complete sanitary reform would abolish.

That which is "written on these subjects"—not the half, but the whole of it and more—is scientific truth, and cannot be railed out of pathology, chemistry and biology, by the shallow inference that nobody could "continue to live" if everybody were in danger. Military statistics show that it takes several hundred musket shots—we forget how many—to kill one soldier in battle. That is the average of danger. But the fact is, also, that one shot is enough to kill a soldier, when it hits him. That is what may happen to any one. The grand fact, however, is that hundreds or thousands will certainly be killed in every engagement of any consequence. That is the aggregate of danger, corresponding to the aggregate of danger from our infected water, earth, air, milk, etc. The mental peculiarity that makes a man a sanitarian is to care something for the needless deaths of fifty thousand fellow-men, even though they take place in fifty thousand places and in 365 days.

We do not expect or desire to make individuals look for death in every drink of unpurified water or breath of foul air. Sanitary science, in its most appalling revelations, suggests no such thing, seeks no such thing. It seeks to interest individuals in the danger and in the protection of the aggregate population, to whom these avoidable public evils mean fifty thousand deaths a year, though one of them may probably not be yours, or mine, or his."

CHILDREN'S WINTER DRESS.

The *Lancet* says: "There is a tolerably general impression in many quarters that in order to promote the health of children it is advisable to subject them to a "hardening" process. The meaning of this term it is needless to explain further than to say that its aim is to encourage native energy by opposition, to engender strength of mind and body by early participation in the struggle for existence. The principle is in itself a wholesome one, and is not without its parallel in the history of nature's processes. Care is most necessary, however, in its application. Without such care it may be, and frequently has been, overdone. In particular must it be remembered that all success in adoption of this plan in education depends on the possession by a child thus trained of a basis of sturdy physical vigor. A delicate child, if treated after the same method, would languish and probably succumb. We have been led into this train of observation by noting the frequency with which one finds children of both sexes and of different ages, constitutions, and positions in life treated after one uniform prescription of hardy training. We would now concern ourselves particularly with that aspect of the question which has to do with clothing during such inclement weather as prevails at present. That considerable variation of opinion should obtain among parents with regard to this subject is only to be expected. Here, it may be said with truth, is room for the wise exercise of private judgment, and here we may in many cases find occasion to apply the maxims of the hardening system. So much may safely be granted, but we must not forget that certain essentials cannot be dispensed with under any plan adopted. Among these the maintenance of bodily heat and dryness is all-important, and certain of the most prevalent customs of domestic life incline us to believe that the fact is but slightly understood. The hat, for example, is often, in the case of girls, far too light and too cool. Instead of straw, we would substitute some form of woollen material, just as boys, with few exceptions, are commonly provided with hats of wool or felt, which are at once light, comfortable, and suitably protective against weather. Underclothing is another matter which does not as yet receive adequate attention. We still find the linen shirt or chemise worn very commonly next the skin. This is an error in personal hygiene which cannot under any system be excused. Summer and winter, indeed, present no material difference as regards the choice of an undergarment. Lighter or heavier, the material certainly should vary in accordance with the degree of external cold; but throughout the year no other substance is so wholesome or so preventive of chill as a woollen fabric. (As we agree with this idea most strongly we would again urge our readers to visit Messrs. Scribner & Sulzer, 1104 Chestnut Street, and investigate the Jaeger system which is based upon the principle of wool all the year through, graded according to the season. —Ed. *A. of H.*) Of the feet we need, perhaps, hardly speak. For them, as for the rest of the body, a casing of wool is the prime requisite; and, indeed, the use of this material as a general investment for the skin will be allowed by members of the profession generally to be the great regulating principle in arranging the dress of children, whatever the view most approved in their physical education."

TERRIBLE VIRULENCE OF DIPHTHERIA.

Dr. C. R. Earley, of Ridgway, Pa. (a most earnest worker in the cause of sanitation), for the purpose of obtaining the facts and a full report of the cases referred to in our last issue (page 39), directed a letter to a gentleman at Negley and asked him for a full and careful report and received the following:

Negley, Ohio, Jan. 4, 1888.

C. R. Earley, M. D., Ridgway, Pa.

Dear Sir:—Your letter of inquiry received and in reply would say: The reports of the Vail family as published in the newspapers were correct, except that only one of the children died instead of two. The outward surroundings at the house are not of a nature to cause any such trouble. The inner surroundings have usually been clean and neat, but Mrs. Vail had not been at home for some weeks prior to the attack and the housekeeping was done by the daughters, the oldest of whom is about 15 or 16 years of age, and the probabilities are that things were not kept in the usual good order. The cellar has not naturally any dampness, other than is usual, as the house stands on high ground and the floor of the cellar is gravel. However, the sides or walls of the cellar are composed of plank instead of stone and the cellar is also ceiled overhead with wood. The house was carpeted and papered about all over. There were no bath rooms or stationary wash-basins in the house. The well has always been considered very excellent and was sufficient to supply all the neighbors for house and stock use for some years and is probably so yet, but for about a year the public had been prohibited from using it. After the disease had well set in the condition of the house inside became very bad and was not attended to by the neighbors, nor by any one until the whole family became afflicted, when the township trustees took them in charge, and upon the advice of the attending physician that they would all die if not removed they were taken to a vacant hall and what then remained of them recovered. Dr. Orr, of Salem, O., performed tracheotomy on the doctor and he is reported to have narrowly escaped death from the same disease.

The following was received from the same source:

NEGLEY, OHIO, Jan. 12, 1888.

I have made inquiry concerning what vegetables were in Dr. Vail's cellar and the opinion is that there was very little fruit or vegetables in it. The well curb instead of being elevated is rather lower than the surroundings, and is a dug well to a considerable depth, and a drilled well the balance of the way to the water. The water don't rise to the dug part.

THE PHYSICAL CONDITION OF THE MASSES IMPROVING.

In an article published in the *Fortnightly Review*, Mr. Charles Roberts deals with the question of the physical degeneracy of our town populations. The inquiry is chiefly concerned with the condition of the laboring classes, though, in contrasting variations of death-rate, average-weight, stature, and the like, there is an inseparable reference to the vital state of whole communities, without regard to rank (*The Lancet*). The author of this paper is not one of those prophets of evil in whose eyes the future of our poorer townsfolk wears only an aspect of unbroken gloom. It is true he does not ignore the fact that causes hostile to the natural and vigorous development of human life are more largely present in cities than in rural districts; but, while admitting this, he justly objects to the wholesale acceptance of evidence derived from statistics which are still necessarily imperfect, and he acknowledges the certain past and probable future success of efforts in the direction of sanitary reform. The food question, though probably incapable of a wholly satisfactory solution, occupies a position much advanced beyond that which it held in the earlier half of the present century. The influence of this and other allied matters of nearly equal moment, a decided and general rise in wages, diminished cost of clothing, of house-rental, and of living as a whole, have, according to Mr. Roberts, exercised a most beneficial effect in checking that process of retrograde change which many regard, not without a reason, as a possibility of the future. Thus far, however, we feel a certain satisfaction that the evil of decadence is more visionary than real; but, at the same time, we must recognize the practical truth that continued future prosperity is compatible only with a vigilant observance of those laws of healthy life which nature constantly defends by imposing on those who disregard them the penalties of physical enfeeblement and final extinction.

A POLITICAL QUARANTINE.

The following, from the (*Philadelphia Times*,) gives some idea of the New York Quarantine: An investigating committee of the New York State Board of Health has made a visit to the Quarantine Station in New York harbor to learn, if possible, whether it really quarantines. The report of the committee seems to be summed up in the following sentence:

"It is the unanimous opinion of those posted in such matters that it would be difficult to imagine a worse state of affairs than now exists at the Quarantine Station." In other words, a station established at the gateway of the United States to prevent the importation of epidemic diseases is so badly managed that it is only a matter of the sheerest good luck that the cholera did not decimate all our centres of population last fall and leave its seeds ready to germinate everywhere in the coming hot season."

If this report had originated from a partisan source there would be at least a chance that it might be exaggerated for political effect. Coming as it does, however, from a non-partisan and perfectly competent body of men, who are charged with the duty of looking after the public health, it must be accepted as trustworthy. It simply shows that the United States has no protection against foreign epidemics that is worthy the name. When the Alesia brought her ship load of cholera to New York bay in the hot days of early autumn, the epidemic was stayed, it is true, but more by good luck than good management. Another importation of the dread disease under the same conditions would stand more than an even chance of being scattered broadcast.

The trouble with the quarantine station at New York is that it is a quarantine for politicians rather than for epidemic diseases. And the worst feature of the difficulty is that the quarantined politicians seem to be impregnably fortified against dislodgement. Tom Platt and his fellow Commissioners were appointed in 1880 for a term of three years. They still hold their places in spite of all efforts to dislodge them, because Tom Platt owns the New York Senate, and can secure the rejection of any successor who may be appointed. The verdict of the Coroner's jury in the case of the first cholera or yellow fever victim, if a truthful one, will be "Died of too much Tom Platt."

THE GYMNASTIC TREATMENT OF NERVOUS AND MENTAL DISEASES.

Dr. Charles K. Mills recently read a paper on this subject before the Philadelphia County Medical Society, which was extremely interesting and instructive. Dr. Mills holds that one of the prime essential requisites for the cure of all mental and nervous diseases is an improvement of the general nutrition of the patient (and in this view he was strongly supported by Dr. Benjamin Lee, who took part in the discussion of the paper), and in no way can this improvement be more satisfactorily secured than by systematic gymnastic exercise. This exercise should be of the simplest kind at first, and should not be continued more than five minutes at a time. It can be gradually elaborated and the time lengthened, but where possible, as in large cities, it should be practiced under the supervision of a skilled director. The exercise may be with or without apparatus, though of course when apparatus is used the duty becomes a pleasant pastime, and for this reason, as well as for others, he would recommend the use of apparatus in many eases. Dr. Mills decidedly prefers the apparatus made by Ruebsam, a description of which will be found in our advertising pages. This treatment must be prolonged, varied, systematic and carried out under good hygienic surroundings, such as pure air, etc. The exercise may be advantageously followed by a sponge bath. In such diseases as chorea, asthma, cerebral syphilis, idiocy and in the feeble-minded, Dr. Mills has had excellent results from systematic exercise, and, to repeat this is to be primarily attributed to the improvement which it produces in the general nutrition. This was an extremely valuable paper and we are sure that our readers will be highly gratified if they put its precepts into practice.

PHYSICAL FIREMEN OF NEW YORK.

One cannot read the daily papers without being convinced of the fact that physical culture is now a vital question. In our own city applicants for positions on the police force must submit to a physical examination, and now we learn that a similar process has been gone through with among the candidates for places in the New York Fire department. The candidates had to lift fifty-pound dumb-bells, run up and down inclined ladders, scale perpendicular posts, with sticks projecting from the sides, and then came the rescue drill, which would remind any man of his boyhood days, when he used to play mimic battles, and carry off the wounded and slain. One candidate would stretch himself out on a bed-tick, and two other candidates would pick him up, bed-tick and all, and run all over the gymnasium with him. Sometimes a clumsy or weary pall-bearer dropped his end, and down came the "corpse" to the hard floor, and up would quickly jump the dead man, rubbing his bruised anatomy and muttering italic expressions. Next, each man in turn would harness up in straps and iron bands placed between two upright posts. The posts supported a cross-beam from which dangled a pair of rings. The candidate seized these rings, and, at a signal, pulled for all he was worth. Any man with a lurking rheumatism or enfeebled muscle in any part of his frame wouldn't dare try to pull. It would probably injure him permanently. This is as it should be; for of what earthly use is a policemen or a fireman who is not physically sound.

HUSBANDS AS NUISANCES.

Sometimes the effect of marriage (says the *Herald of Health*) is to transform a male exquisite into a sloven, especially if the cares of poverty and an increasing family rest upon his shoulders; or it may be that he is by nature slovenly, and easily relapses into that ideal-destroying condition when the vanities of youth cease to act as a spur. Husbands of this kind commonly let their beards grow, neglect to polish the heels of their boots, and develop an irritating tendency to affect rubbers in all weathers. Their hats, if not actually shabby, are usually antiquated, and their trousers, being worn too short, invariably bag most ugly at the knees. They wear long overcoats, and either carry no umbrellas (caring nothing for their dingy old clothes) or umbrellas of prodigious circumference, of cheap material, and warranted to turn inside-out every time the wind happens to catch them right. These men, if living out of town, are almost sure to hatch a fondness for poultry, and to spend their Saturday afternoons and Sunday mornings pottering about hen-coops and watching the strut of their favorite roosters. They care nothing for society, not much for the opera or the play, and are alarmingly prone to fall asleep over their newspapers in the evening. They usually prefer a pipe to a segar, and they are mighty consumers of beer.

THE FOURTEEN MISTAKES OF LIFE.

Somebody has condensed the mistakes of life, and arrived at the conclusion that there are fourteen of them. Most people would say, if they told the truth, that there was no limit to the mistakes of life; that they were like the drops in the ocean or the sands on the shore in number; but it is well to be accurate. Here, then, are fourteen great mistakes: It is a great mistake to set up our own standard of right and wrong, and judge people accordingly; to measure the enjoyment of others by our own; to expect uniformity of opinion in this world; to look for judgment and experience in youth; to endeavor to mould all dispositions alike; not to yield to immaterial trifles; to look for perfection in our own actions; to worry ourselves and others with what cannot be remedied; not to alleviate all that needs alleviation as far as lies in our power; not to make allowances for the infirmities of others; to consider everything impossible that we cannot perform; to believe only what our finite minds can grasp; to expect to be able to understand everything. The greatest of mistakes is to live for time alone, when any moment may launch us into eternity.—*From Wives and Daughters.*

THE VENTILATION OF SLEEPING ROOMS.

According to the *Lancet*, Dr. Brown-Séquard, who has been preaching that bad ventilation of sleeping rooms and poor and monotonous food are great causes of phthisis, discussed the subject at a recent meeting of the Academy of Sciences, Paris, taking many of his examples from England. Wherever population is dense and sleeping rooms ill-aired or overcrowded, consumption prevails. A room in which a consumptive person sleeps is reeking with contagion if the air he exhales is not carried off. Dr. Brown-Séquard exhibited an apparatus of his invention. A reversed funnel the shape of a lamp shade is placed at the end of a tube, so arranged that, when it is placed beside the bed, the reversed funnel will be above the sleeper, and draw up the air he breathes. The other end runs into the chimney of the room. If there is none, it is taken through a heating apparatus to an air-hole. In either case the contagium is destroyed by heat, and after the manner suggested a few years ago by Dr. Burdon Sanderson and others. Certainly a very simple measure and easy of attainment by any one.

HOW KILRAIN TRAINS.

It is of interest, from a sanitary point of view, to learn how the great prize-fighters train, as it is intended to put them in the best possible physical condition. Kilrain, who has been so much talked of recently in sporting circles, says: "I get up at seven in the morning, and go for a sharp walk for an hour. Then at eight I have breakfast, which generally consists of some sort of fish, with a chop or steak and eggs to follow, and wash down with a small cup of tea. Then I go for a ten or fifteen-mile spin of walking or running. At 1.30 I have my dinner, for which I take roast beef or mutton and a glass of beer. Then in the afternoon I practice with the bag, dumb bells or Indian clubs. At 6 o'clock I have my tea, taking a chop, perhaps, and turn in at 10."

SIGHT-DESTROYERS.

We Americans, with our superabundant national conceit, says the *Telegraph*, think we know everything worth knowing; but there are a good many things that we might learn from the alleged effete Governments of the Old World. For instance, we might take a healthful lesson from the example of the Department of Education at Vienna, which has recently issued a decree forbidding the use in schools of certain books, on account of their small print, and also ordering the banishment of the same destroyers of youthful eyesight from the school libraries. Such a general order, issued in this country, were it possible, would cause a mighty cleaning out of the desks and shelves wherein lie a multitude of books sent forth by conscienceless publishers, and purchased by incompetent directors and managers, over which tens of thousands of young eyes pore, to their infinite injury. This is a matter that receives entirely too little attention from parents and educators. Between poor print, badly lighted schoolrooms, and night study at home, we are raising in this country an immense crop of young people who will go through after-life sadly hampered by injured sight.

DISEASE IN PILLOWS AND BOLSTERS.

A correspondent of a medical journal bids us take note (says the *London Daily News*) of the fact that disease and death lurk in the very pillows and bolsters on which we lay our heads at night. It is easy to talk of down and feathers, but as a fact, if they were cut open, these articles would be often found to be more or less stuffed with the most heterogeneous materials. Pillows, bolsters, and beds have been examined, and found to contain portions of filthy, coarse black serge, apparently parts of soldiers' coat sleeves, pieces of dirty, greasy silk dresses, old worsted braid from the borders of woman's gowns, soiled linen rags and colored calico and even nuts and walnut shells and pieces of crinoline wire. The bedding in this case was bought new, we are assured, a few years ago of an expensive and respectable upholsterer. Moreover, a woman who was employed to do the unpicking work for the trade informed the lady of the househould that the practice of stuffing bedding with dirty rubbish and rags was very general, and that few beds or bolsters contain only the materials of which they are supposed to consist.

CITY *vs.* COUNTRY LIFE.

Dr. C. A. Lindsley, Secretary of the Connecticut State Board of Health, commenting on the vital statistics of Connecticut for December, says:

"The common belief that the country is healthier than the city is not borne out by the statistics of December. The annual death rate for that month in the ten urban towns of the State was 15.3 per 1000, and that was exactly the annual death rate for the whole State.

"This would certainly not be so if the inhabitants of the populous towns lived with the same disregard for hygienic law that their rural neighbors do. The abandonment of surface wells in the cities to a great extent, the substitution of a purer water supply, the introduction of sewers and corresponding abolition of filth pits, thus providing for the speedy removal of the filth which is usually retained about the houses of country homes, all contribute to make the homes of city residents as wholesome as those of their country neighbors who neglect these important matters."

THE DELETERIOUS EFFECTS OF TOBACCO ON THE THROAT AND NOSE.

Dr. M. F. Coomes, of Louisville, Ky., considers smoking far more injurious to these parts than chewing. The smoke comes into the mouth heated, and loaded with an irritating oil that would soon coat the mucous membrane were it not washed away by the saliva. Cigarette smoking is especially injurious, because the smoke is so universally inhaled, causing pharyngitis, laryngitis, and chronic irritation in the nose, not to mention the injury it may occasion to trachea and lungs. Where the smoke is habitually expelled through the nose, we find hypertrophies, congestion, dilated vessels and a hemorrhagic condition. The smell is impaired or destroyed. The potash salts may also have some effect in adding to the injury. Ninety-five per cent. of smokers have something abnormal or unhealthy about the upper air passages. In bad cases he found chronic hyperemia and inflammation of the epiglottis, with congested cords, and a hacking cough to remove the tough mucus; the voice tires easily.

MORTALITY OF PHILADELPHIA IN 1887.

Old Mortality claimed 22,173 persons last year, an increase of 1171 over any one of the previous five years. Alcoholism carried off 144 persons; apoplexy, 471; Bright's disease, 378; cancer, 507; casualties, 376; cholera infantum, 889; congestion of the lungs, 253; consumption, 2767; convulsions, 975; croup, 457; debility, 618; diphtheria, 433; heart disease, 857; scarlet fever, 161; typhoid fever, 632; whooping-cough, 117; inflammation of the lungs, 1061; inflammation of the stomach and bowels, 747; inanition, 659; marasmus, 1051; murder, 10; old age, 802; paralysis, 426; suicide, 90; sunstroke, 125. Of those who died, 5387 were under 1 year of age, 2123 between 30 and 40 years, 114 between 90 and 100 years, and 12 over 100 years. The males numbered 11,535; females, 10,638; adults, 11,901; minors, 10,272. The nativity was: United States, 16,364; foreign, 4863; unknown, 867; colored, 1197.

VIOLENT EXERCISE.

Charles F. Wright, who died from dilatation of the heart, brought on in a foot-race (says a contemporary), will probably be quoted for a long while to come as a proof of the perils of athletic sports, but what his death shows is the peril of sudden, short-distance work. A hundred-yard dash in a closely contested race is a strain on the lungs and heart which no one should risk unless in complete training, and this is true of the entire round of athletic feats requiring sudden exertion. It is equally true of many sudden exertions in daily life which are undertaken by middle-aged men without training or preparation. More men are probably injured every year running for trains than have suffered from the effect of sprint races since short-distance events began to figure on the cards of athletic meets.

HOW TO MAKE A BED WITH A SICK PERSON IN IT.

Housekeeper very truly says: "If the sick one's apparel is to be changed, attend to that first; then allow a little time for rest. Placing the patient on one side of the bed with a light covering over him, proceed to make the other side, putting on a clean sheet with one half folded in the middle of the bed; place a clean pillow ready for the head; now move the patient over to the fresh side and make the other, drawing out the folded part of the sheet. Take the clean upper sheet and spread over the covering already on the bed. If the patient is not too sick to hold the upper part of the sheet he can do so; if he is, pin each upper corner to the bed; from the foot draw out whatever is under, and put on the remaining covering, and the feat is accomplished without exposure or embarrassment to either."

THE SEWERAGE OF PHILADELPHIA.

As a warning to other cities on the question of sewerage, Philadelphia really stands pre-eminent. We have miles and miles of sewers, but we have in reality no *system*. The sewers have grown with the growth of the city, but not according to any preconceived, intelligent plan, and, as a natural consequence, we have a very much mixed state of affairs. That we have reason to hope for better in the future, is to be inferred from the fact that the proposition to appoint a commission to inquire into the best plan of sewerage for the city is being vigorously pushed in our Councils. In the meantime, that they may not ultimately find themselves in our present condition, all small and growing cities and towns should start out with an intelligent *system* of sewerage, so designed that it can be added to as the population increases, even to a point beyond the most likely development of the locality.

ACIDS IN CANNED GOODS.

T. P. White sends to the Chemical Society a communication, noted in the *Popular Science Monthly*, in which he gives a decidedly negative answer to the question whether the acids of canned fruits may not form poisonous salts with the tin. He reports as the result of his experiments, that "tin is entirely devoid of danger, when taken internally, in any form that might arise from being in contact with fruits or vegetables." He believes that the cases of accidental poisoning attributed to tin, were due to solder or other impurities—arsenic, copper, or lead. Prof. W. Mattheau Williams says that there need be no lead in solder; that it is only put in for cheapness' sake, and that tin makes a superior solder to any alloy. Therefore, all danger may be obviated by prohibiting the use of any other solder than pure tin.

A NOVEL DESK CALENDAR AND STAND.

A most novel, convenient, and valuable calendar for 1888 is the Columbia Bicycle Calendar and Stand, issued by the Pope Mfg. Co., of Boston, Mass. In this calendar a new departure has been made, decidedly unique and different from any previous attempt in calendar construction. The calendar proper is in the form of a pad, containing 366 leaves, one for each day in the year, to be torn off daily. A portion of each leaf is left blank for memoranda, so arranged that the memorandum blank for any coming day can be turned to immediately at any time. The pad rests upon a portable stand, and when placed upon the desk or writing-table, the entire surface of the date leaf is brought directly before the eye, furnishing date and memoranda, impossible to be overlooked. It will be sent *gratis* to those of our readers who write to the Pope Mfg. Co., mentioning this journal.

CARNRICK'S SOLUBLE FOOD.

Prof. H. E. Stockbridge, of Sappora, Japan, is the Consulting Chemist to the Imperial Japanese Government, and it is therefore fair to infer that he is a man of very distinguished attainments. He has recently written all the way from Japan, to Reed & Carnrick, of New York, for a quantity of their food, since by actual experience in his own family, as well as by chemical analysis, he believed it to be just what he wanted for his child. Such facts as these must tend to do more to inspire confidence in an article than all the advertising imaginable.

HOUSE POISON.

If the condensed breath collected on the cool window-panes of a room where a number of persons have been assembled be burned (says the *Bulletin*), a smell as of singed hair will show the presence of organic matter; and, if the condensed breath be allowed to remain on the windows for a few days, it will be found, on examination by a microscope, that it is alive with animalculæ. The inhalation of air containing such putrescent matter causes untold complaints which might be avoided by a circulation of fresh air.

◆

POISON ON MONEY.

As we watched the collection basket passed around in church last Sunday, and saw the multitude of quarter, half and dollars of silver, greasy and dirty looking, coming from all varieties of pockets, we could not help but think that the germs of some diseases must be attached to some of the greasy money. We thought that if it was our duty to weekly count and handle all this dirty money, we would keep a pair of gloves specially for this purpose that our hands might be protected, and having this thought we give it to our readers for what it is worth.

◆

HOW TO GET WARM.

The next time that you are out on a cold day instead of entering a bar-room and imbibing whiskey that you may "warm up," resort to the following little device: Inspire all the air you can several times, inflating your lungs to their utmost capacity. Thus you will feed oxygen, the supporter of combustion, to the physiological fire within you, making it burn more brightly and, in accordance with nature's laws, will be warming your body in a harmless and a natural manner.

VERY OLD AGE.

The *Medical Record* tells us that the death is reported from Constantinople of a man named Dimitrios Antippa at the extraordinary age of one hundred and fifteen years. The deceased was born at Cephalonia in 1772, and, though in later years he settled down as a merchant in the Turkish capital, he had passed his earlier days in Paris during the Reign of Terror, having had among his personal friends Marat, Danton, and Robespierre. To the last M. Antippa retained his clearness of intellect.

◆

DANGER IN UNCOOKED MILK.

According to *The Lancet* milk epidemics of typhoid fever, scarlet fever, and diphtheria have repeatedly shown how severely the incidence of the disease has been felt upon those using uncooked milk. It has been shown that the cow may suffer from a disease which at present is rarely, if ever, regarded as of any importance by dairymen, and which may give to the milk a power of producing scarlet fever in those who consume it in its raw state.

◆

THE AUTHORITIES MUST KEEP THE STREETS IN REPAIR.

An interesting decision was recently rendered in Williamsport, Pa., by Judge Cummin in the case against the Mayor and Councils of the city, who were arrested and put under bail some weeks ago for failing to keep one of the streets in proper repair. The Court decides that the law makes the Mayor and Councils responsible for the condition of the streets, and rules that the defendants are liable to indictment for having neglected their public duty. The opinion is fortified by numerous Supreme Court decisions.

GEORGIA'S SOLID CITIZEN.

W. H. Daniel is one of Georgia's most solid citizens. He is sixty-four years old; has nineteen sons and four daughters; was never ill in his life; never took a dose of medicine; does not drink tea, coffee, or whiskey; gets up at 4 o'clock every morning; works ten hours every day; and confidently expects to live to be one hundred years old. If he does not, it will not be the fault of the life he leads.

LUNCHEON BOXES.

A prominent physician says that children's school luncheons should not be placed in the old-fashioned lunch basket or tin box, as bad odors always cling to a much-used receptacle. What he recommends is a fresh, clean napkin, wrapped neatly round the bread and butter, or other edibles, and a paste-board box to hold it all. The box can then be thrown away when the meal is done. The good sense of this will strike every person given to wholesome living.

THE DOCTOR WAS UNSELFISH.

A gentleman of Buffalo said not long ago to his physician, a doctor who has perhaps the largest and most lucrative practice of his profession in Buffalo: "It was a bad day, doctor, when you persuaded me to leave off drinking four years ago." "How so?" said the doctor, "you never looked as well in your life." "Very true!" responded the gentleman, "but my doctor's bill in the mean time has not been $10."

OBJECTION TO CHEAP SPONGES.

Many of the cheap sponges sold on the streets (says the *American Druggist*) are second-hand. They are obtained around the hospitals in large cities after they have been used and thrown away. These cast-away sponges are gathered up by people who make a business of it, and sold very cheap. Raw brown sponges are safer, therefore, than the bleached ones, wherever obtained.

POISONOUS MUSHROOMS.

It is stated that a very considerable quantity of injurious fungi is now finding its way into the market as mushrooms, and several cases of severe illness, caused by the consumption of what appear to be the button mushrooms, but which are really poisonous fungi, are reported. These poisonous mushrooms have a yellowish appearance when cut, but otherwise appear exactly the same as the edible mushroom.

FILTH AND DIPHTHERIA.

Dr. John C. Peters, a New York Sanitarian of repute, says that, to his mind, diphtheria is simply a sore throat with the impression of foul air upon it, and that the prevalence of the disease depends somewhat upon the condition of the streets of a city. When the streets are clean this class of diseases decreases and *vice versa*. Certainly a valuable, instructive and practical observation.

DICKINSON COLLEGE GYMNASIUM.

Dickinson College, at Carlisle, Pa., recently celebrated, with appropriate ceremonies, the opening of a fine gymnasium, equipped at a cost of $5000. This sum was donated to the College for this purpose by Mr. W. C. Allison, the well-known philanthropist of this city, who, by this gift, shows how thoroughly he appreciates the benefits of physical culture and rears a lasting monument to his name.

WHY ARE CHILDREN CREATED?

A Philadelphia rich man, who left a fortune in 1883 (says the *Times*), gave $80,000 as a fund for the finding out for what specialties certain children were created. It provided a room full of all kinds of tools, and the children were to be brought into this room and watched. If they played with musical instruments more than with carpenters' tools they were to be brought up as musicians; and if they preferred the spade to the piano they were evidently cut out for gardeners. It was the same as to other pursuits, and a complete scheme of education was provided. The will was of course contested and the courts of Philadelphia decided the testator to be of unsound mind.

THE NEGROES NOT DYING OUT.

The *New York Herald* says: "Some of our contemporaries are again at work on the question, 'Why are the negroes dying out so rapidly?' The death rate among the colored people of the South is very large, but it is unsafe to argue that therefore they are decreasing, though at first sight that would be a very natural view to take. It is the birth rate that tells the story, and that is so great that the four hundred thousand negroes at the beginning of this century have grown to be something over seven millions."

TOBACCO BLINDNESS.

Tobacco blindness is said to be becoming a common affliction. At present there are several persons under treatment for it at one London hospital. It first takes the form of color-blindness, the sufferers, who have smoked themselves into this condition, being quite unable to distinguish the color of a piece of red cloth held up before them. Sometimes the victim loses his eyesight altogether.

PREVALENCE OF DEFECTIVE PLUMBING.

Charles F. Wingate says that in Brooklyn, out of 1200 houses passed and officially examined, 900 were found to have defective plumbing. In one such house seven cases of typhoid fever were the result of plumbing "passed," and apparently with equal ease, by the health authorities and typhoid fever germs; and the *Evening Telegraph* says: "If this is true in Brooklyn, after years of inspection and a comparatively stringent law, it is still more true here, where it is probably within the mark to say that not one house in twenty is provided with efficient sanitary plumbing, and the worst in this respect are often the costliest. Such plumbing yearly causes as many deaths in this city as a year's railroad accidents in the entire country."

TO DESTROY MOTHS AND ANTS.

Medical Classics says: "Saturate the edges of carpet with a strong solution of alum water to destroy moths; if an unpainted floor, wash the floor with it before putting down the carpet. Do the same to shelves where black ants appear."

PROFESSOR PENROSE.

Dr. R. A. F. Penrose has resigned the Professorship of Obstetrics and the Diseases of Women and Children in the University of Pennsylvania. This resignation is to take effect at the close of the current session.

TO KEEP PIPES CLEAR.

A lump of soda laid upon the drain pipe down which waste water passes will prevent the clogging of the pipe with grease, especially if the pipe is flooded every week with boiling water.

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Communications.

CONTAMINATION OF WELLS AND OF THE ATMOSPHERE BY THE IMPROPER DISPOSAL OF HUMAN EXCRETA.

BY BENJAMIN LEE, M.D.,
Secretary, State Board of Health of Pennsylvania.

Editor Annals of Hygiene:

You have requested me to reply to a query on the above important subject. Allow me to begin by repeating the letter of inquiry, and placing side by side with it certain other similar statements, which will enable me to treat the subject in a somewhat broader manner.

LETTER I.

Editor Annals of Hygiene:

I am using water from a well forty-five feet deep. My nearest neighbor has a well at a distance of two hundred feet, twelve feet deep, into which is discharged everything from the bath-room and water-closet. The soil not being very porous, a pump is used in this well frequently to prevent its overflowing, and the discharged material runs over a portion of my property, while the obnoxious odor pervades the atmosphere for a great distance. The above statement will apply to hundreds of cases in the small towns of our State, and you would confer a favor on many by advising me as to the danger from contamination of the water in my well, and also from living in the atmosphere thus charged, and then please give the remedy. S.

In connection with this subject, a recent report of Prof. Wm. B. Atkinson, medical inspector of the Delaware district, is full of interest and instruction. I make the following extract:

REPORT I.

Dr. Benj. Lee,
Sec'y and Executive Officer, State Board of Health:

Dear Sir:—In obedience to your instructions, on Oct. 21st, I visited West Chester, and, by the courtesy of Dr. Woodward, was enabled to visit a number of the villages in that vicinity. At Unionville, Dr. Perdue kindly accompanied me to a number of houses in which fever had occurred under his observation. He treated eight cases, all of which recovered under his judicious advice; one of these had a severe intestinal hemorrhage. One group of six cases occurred in a block of houses, all of which were built directly on the ground; they were old frame tenements, with stables and privies in rear, not beyond eighty feet away, with the ground in each case sloping towards the house. These privies were the ordinary frame shanty, with a seat about two feet above the floor; no excavation, the excreta dropping upon the surface of the earth and draining toward the house. For drinking and culinary purposes, nearly all the inhabitants of these houses relied upon one pump, which is so located that it receives the drainage of at least four privies, two stables, and one pig-pen. Other stables and privies are sufficiently near to aid in tainting this well. A single case is located in the rear of this, and the pump of this house adjoins one privy and two stables. The only pump properly located with reference to the privy is not used by any of the families.

Two other cases are located two blocks away, and while these houses are better as to construction, etc., still pumps are respectively seventy and eighty feet from privy and stable, with a drainage in each case forming contamination of the drinking water. One case has just occurred in this block simulating typhoid fever. This house has the same conditions as its neighbors.

On October 24th I went to Coatesville, and by the courtesy of Dr. Irving was enabled to visit a number of villages in that section. At Doe Run there had been no cases of fever. At Gum Tree, in one house were two families numbering some ten persons, of these six or seven had been ill with a fever of a low form, with a great deal of diarrhœa. One case was convalescent in the eighth week, and judging from the symptoms detailed, the entire absence of those pathognomonic of enteric fever and the peculiar diet which she was then partaking of, both Dr. Irving and I agreed that it was very unlike typhoid, and had probably been a case of enterocolitis.

This view was supported by the condition of the drinking water. The privy, the usual country one, was about fifty feet from the pump, with a down grade leading that way. Directly against the curb of the well was the hen house, a tumbledown shed with its floor of earth sloping to the well, so that its whole drainage was into the well. In addition the whole wood-work was rotten, so that the well itself was dangerous to approach. I was informed that always after a rain, and often without one, the drinking water closely resembled road washings and was sickening to smell, sight and taste."

Dr. E. D. Payne, medical inspector of the Lycoming district, describes a very similar condition of things existing in the town of Towanda to that reported by your correspondent. He says:

REPORT II.

"The soil is a heavy clay with underlying rock, from a few to many feet deep, the town being on a series of hills, gradually rising from the river. Only in spots can underlying sand and gravel be found, from twenty to fifty feet deep, which renders the construction of cesspools partially unsafe or impossible. Open gutters are generally, therefore, relied on for the disposal of common kitchen slops. These are, with few exceptions unpaved, and are allowed to grow up with rank grass and weeds. For drain tiles from the kitchen to the gutter, glazed tile is used by many, but wooden drains are in too common use. Most house yards have a well and a privy vault on them in close proximity. From the character of the soil, the wells must be principally supplied by surface water, much of it running directly in. It will readily be seen what danger there is, that in heavy rains the shallow privy vaults will be flooded, and their contents escaping will find their way over the surface into the wells."

Mr. L. H. Hunter, inspector of the

Allegheny district, says of West Elizabeth, which was visited by a serious epidemic of typhoid and filth fever in the summer af 1886:

REPORT III.

"I believe, after a careful investigation, that the epidemic was caused by a combination of circumstances, one of which was the filthy condition of privies and their close proximity to the wells. A large number of these wells showed on being tested the presence of organic matter. There were also a large number of cellars rendered foul from surface drainage, this being particularly the case along the railroad, where the surface water ran directly into the cellar windows, the grade being level with the windows."

Your querist is entirely justified, therefore, in his assertion that the desciption which he gives of his own immediate neighborhood will apply to hundreds of cases in small towns of our State. The question is an urgent and burning one.

To answer his queries intelligently would require certain data which he has not furnished, viz: the relative height of the surface of the ground at his well and at his neighbor's cesspool; the distance of the portion of his land which is overflowed by the contents of the cesspool when pumped out; and the inclination of the surface between the overflowed area and his well. It may be safely said, however, that a cesspool sunk in a soil so impervious that frequent pumping out is necessary, cannot by leeching contaminate a well at a distance of two hundred feet, or, indeed, half of that distance. If the slope of the ground is from the cesspool towards the well, it may very easily conduct the material pumped from the former to the latter, especially on so compact a soil, not perhaps just at the time of pumping, but as the result of surface drainage during heavy rains. One of the earliest cases referred to this Board was that of a limited epidemic of typhoid fever at Fernwood, Delaware Co., caused precisely in this way. But supposing that the surface inclination is such as to make contamination of the well impossible, the health of your correspondent's family is certainly seriously threatened by the contamination of the atmosphere. The investigation made by Dr. R. Lowry Sibbert, medical inspector for the Cumberland District, and myself, into the causes of an epidemic in the State Reformatory at Morganza, led us to the unavoidable conclusion that atmospheric contamination by human excreta was responsible for it. It is easy to understand how children and invalids in sleep, breathing, as they so often do, with their mouths wide open, could have the germs of disease deposited on the tongue and mucous membrane of the mouth and throat in considerable quantities, and convey them, by swallowing, to the alimentary canal as certainly as though the same germs had been taken in water or food.

REPORT IV.

COMMONWEALTH OF PENNSYLVANIA,
STATE BOARD OF HEALTH,
EXECUTIVE OFFICE, 1532 Pine Street.
Philadelphia, October 18, 1886.

To the Honorable the President and Board of Managers of the State Reform School at Morganza:

Gentlemen:—I have the honor to make the following report of an investigation into the causes of an epidemic of continued fever existing in one of the buildings of your institution, made by Medical Inspector, Dr. R. Lowry Sibbert and myself, at the request of your superintendent, Mr. Quay, October 13th and 14th.

NATURE OF ILLNESS.

Up to the time of our visit, twenty-three cases of fever had occurred, one of which had terminated fatally. Of these twenty-three cases, fifteen were from one building, while the remaining eight were about evenly distributed among five other buildings or wings.

These eight were of a much milder type than the others. The buildings in which the large number of cases occurred is that occupied by "E" family. Of forty-six persons sleeping in the dormitory of that building, fifteen have been taken sick, or one-third of the entire number. We examined all the patients in the infirmary, sick and convalescent, as well as those who had returned to duty, exhibiting the disease in every stage from the second day of the attack to end of the sixth week. It is our opinion that the large majority of the cases have not been true typhoid or enteric fever, but rather a low type of continued fever; some of them, perhaps, properly to be designated as bilious fever. The medical treatment which they had received appeared to us judicious.

CAUSES OF THE OUTBREAK.

We find several conditions contributed to the production of this endemic:

First. The introduction of steam, of quite a high temperature, into the rain-water spouts which communicated directly with the main sewer, the result of which has been to draw up the air from the sewer, and convey it through the open windows of the dormitory, close to which these spouts open into the gutter of the roof. In support of this theory we would call attention to the fact, that a large proportion of the cases occurred in individuals whose beds were in close proximity to the windows.

Second. The existence of flues running from the cellar to the dormitory, originally designed as hot air flues, but now serving only to convey the cellar and ground air directly to the dormitory.

Third. The damp condition of the ground around the disused furnace and boiler in the cellar.

Fourth. The over-heated condition of the cellar as compared with the remainder of the house, establishing a strong upward current from the former to the latter.

SUGGESTIONS FOR THE REMOVAL OF THE CAUSES OF THE OUTBREAK AND CONTINUANCE OF THE FEVER.

First. All connection between the rain-water spouts or conductors and the sewer should be severed, and the rain-water conducted on the surface.

Second. The main sewer should be flushed for twenty-four hours with the largest head of water that can be commanded.

Third. The main sewer and all the house connections should be disinfected.

Fourth. The evacuations of those ill with fever should be passed in vessels containing a large quantity of a strong disinfectant solution, and then carried a considerable distance away on the farm and buried a foot deep." The recommendations above recorded were fully complied with, the sickness ceased and there has been no return of it.

The proper course for your correspondent's neighbor to pursue is as follows: He should conduct his bath water off over the surface, so some suitable natural drainage stream and use his cesspool for the water-closet only. The occasion for emptying it would thus become much less frequent. When it did become necessary it should be done with the use of deodorizers and disinfectants (if possible with an odorless excavator), and the contents at once carted to a distance in the country, and properly composted for fertilizing purposes. The State Board of Health, however, cannot interpose between neighbor and neighbor. To right individual grievances of this kind would demand the expenditure of ten fold its appropriation and an army of inspectors. It has, therefore, adopted the following form of reply to all such complaints. Its function is to protect communities not individuals, to preserve the public, not private health. The rural sufferer from his neighbor's negligence, carelessness, heartlessness and filthiness must still find his remedy in a suit at common law:

FORM II.

COMMONWEALTH OF PENNSYLVANIA.
STATE BOARD OF HEALTH,
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Dear Sir:—Your communication of ——complaining of a nuisance existing on the premises of —— township, —— county, is received. I would say in reply that it is the decision of this Board that it was created for the protection of the public health, and not for the abatement of private nuisances. Individuals suffering from individual nuisances, have their resource in a suit at common law or complaint to the local authorities. In order to entitle a complaint to recognition by this Board, it should emanate from a City or Borough Council, a Burgess, acting in his official capacity, a Board of Health or a Health Officer, a Board of Education, or ten respectable citizens (house-holders or rent-payers) uniting in an affidavit before a Notary or Justice of the Peace. I enclose a blank form of complaint, which will be duly considered if returned signed as above indicated.

Yours very respectfully,
—— Secretary.

The following communication from a highly intelligent physician was addressed to me some time before the passage of the act creating the State Board of Health:

LETTER II.

DR. BENJAMIN LEE:

Dear Sir:—I desire some information and suggestions from you on a subject you are very familiar with, and upon which you have given more thought than any one I know:

1. W—— is an old-fashioned country village, located on high ground, in a limestone soil, and natural caves underlie our streets, some of which open into the cellars of our houses; many of these caves are opened in digging cellars in different portions of our town.

2. The water supply heretofore was derived from wells dug down from thirty to seventy feet, and seemed abundant and apparently as pure as is generally derived from such sources. Some of these were dug down through some of these cavernous openings into the earth.

3. Privies are used all over the town; some are a good deal exposed, and others are dug from eight to ten feet in depth.

4. Three years ago, owing to great success of some of our manufacturing interests and suddenly acquired railroad facilities, the town increased so rapidly in population that we now number about 4000 people instead of a former population of about 2000—just doubled.

5. A water company was formed, and we now draw into town pure cold mountain spring water, of perhaps as good a quality as can be found in the world; this water comes from South Mountain, at an altitude of about 1000 feet above the town.

6. The entire system of water supply is suddenly changed. Water-closets are being introduced. Some of our citizens are using their wells as cesspools for the drainage of all kinds of filth, even running into them the contents of water-closets. On account of the cavernous condition of the ground under

our city, these underground springs which supply our wells must communicate with each other more or less. I had a well of excellent water, but at once arched it shut for fear of having my family poisoned. Those who do not use wells for cesspools, dig wells ten and fifteen feet deep for running their drainage into.

Now our borough authorities are ignorant of all the laws of health, and I have been consulted as to the best thing to do under this state of things. Their attorney tells them they cannot prevent citizens from using their wells as cesspools. I can get them to pass any ordinance I desire bearing upon this subject. I write to you to please give me your views on the proper ordinances and the proper thing to be done on the premises. Any information from you on this subject will be very gratefully received by the council as well as by me. What shall we do in regard to the water-closet system? We have no sewers and are yet too poor to construct proper sewers. As soon as we get into funds we will construct sewers. We have no stream of water nearer than one mile. I have protested against this thing of running sewage into the earth under the town, as I contend that the underground springs will be so contaminated as to endanger the lives of our thickly populated rural districts near town, who are compelled to depend upon wells for a water supply. The dry earth closet system cannot well be carried out in this place. I have no doubt if this could be accomplished, and the sewage all hauled to the country and utilized as a fertilizer it would be best. Trusting you will give me a prompt reply, I remain,

Truly yours, with highest regards."

The problem presented by this letter is a much more complicated one; and, although not met with so generally or so constantly as that first considered, is fraught with even greater capability of harm, and, as will be shown, affects a geographical area of great extent. In reference to this peculiar geological formation and its distribution throughout this State, I am informed by the Hon. J. Simpson Africa, former Secretary of Internal Affairs of Pennsylvania, whose many courtesies to the Board in his official capacity I desire gratefully to acknowledge, that the limestone of greatest deposit, called "Auroral" by Rogers, and "Trenton" by Lesley, contains the largest caverns. It is found in the Chester Valley, Lancaster county, Cumberland, Lebanon, Kishacoquillas, Sinking, Penn's, Morrison's Cove, Nittany and other valleys running through the counties of Chester, Lancaster, Berks, Franklin, Cumberland, Lebanon, Mifflin, Centre, Bedford, Blair, and some others. A later limestone, called by Rogers "Meridian," or "Pre-meridian," also contains some caves, but the formation being thinner than the Auroral, they are more limited in extent. Rogers describes this formation as the great Auroral limestone of southern Pennsylvania, cropping out as the Doe Run limestone, the Boardley Run limestone, the West Marlborough Inn limestone, the Street Road limestone, etc., etc. This last named is the longest and most continuous of all the limestone troughs.

D'Invilliers, in his excellent report on the geology of the South Mountain belt of Berks county, published in the Second Geological Survey of Pennsylvania, says: "Caverns are a striking feature of the limestone belt of the Great Valley. They are numerous and large. When their roofs fall in *sink-holes* are formed in the fields. These are so numerous that the whole belt may be said to be pitted with them. They show how the destruction of the limestone formation has been going on in past ages, and new ones prove that it is still going on, probably at the same rate. At the bottom of the caverns, and beneath the sink-holes, underground waters flow and issue at springs in the beds of the deeper valleys. This explains the scarcity of brooks and creeks in some parts of the map."

Franklin Platt, reporting on the geology of Blair county, in the same series, remarks that:

"The weathering of the limestone produces the usual results of sinking streams, strong and unchanging springs, caverns, bottomless caves, natural arches."

Thus it will be seen that there are areas embracing many thousand square miles in this State, usually comprising the farm lands and richest valleys, and therefore very populous, which are so thoroughly honey-combed a short distance below the surface that subterraneous streams of considerable size are traversing them in all directions. The possibility for evil in this condition is too apparent to need demonstration. The writer well says "that the lives of the inhabitants of our thickly-populated rural districts near town, who are compelled to depend upon wells for a water-supply, are endangered by running sewage into the earth" anywhere in the regions where these geological formations prevail. Who can pretend to say indeed how far such lethal contamination might not be carried? With no opportunity for aëration or purification by the chemical rays of the sun, the poisoned stream would retain its noxious qualities almost indefinately, and populations twenty or thirty miles away might be visited with inexplicable outbreaks of fever or dysentery as a result. In a report made to His Excellency, Governor Pattison, of an inspection of the Orphan Home at Butler, made by myself, occurs the following passage:

REPORT. V

"A very objectional plan prevails here, however, as in many, perhaps most, country towns in this State, of covering over a full privy vault with earth and digging a new one a short distance from it instead of removing the contents and disinfecting it. As the level gradually sinks, new earth is thrown on top until the subsidence of level ceases. This process is repeated every few years, in accordance with the depth of the pit, so that in the rear of the houses on the street with small yards, the whole ground becomes honey-combed with these foul deposits. Covered up in this way, the filthy mass has no opportunity for becoming oxidized, and retains all its poisonous properties. Gradually permeating the soil, it in time contaminates all the wells in the neighborhood, or, as is the case in some sections of the State, finds its way into subterranean streams and is carried, it is impossible to say to what distances, to infect unsuspecting communities and give rise to mysterious outbreaks of epidemic disease. Even if, in consequence of the large extent of the grounds in this instance, the air escapes serious contamination, and the water-supply is brought from a distance and thus protected, still the wells of other citizens living on lower tracts may be undergoing contamination. This mode of disposal of the contents of a privy vault must therefore be unqualifiedly condemned."

The following are the provisions of the Model Ordinance proposed by the State Board of Health for adoption by all boroughs and cities in the commonwealth, in regard to this important subject. It contains the *minimum* of requirements, in the hope of its more general adoption than if it aimed at an absolutely perfect standard.

"SECTION 17. No privy-vault, cesspool or reservoir into which a privy, water-closet, cesspool, stable or sink is drained, unless it is water-tight, shall be constructed, dug or permitted to remain within one hundred and fifty feet of any well, spring, or other source of water used for drinking or culinary purposes; unless the surface of such vault, cesspool or reservoir is at a lower level than the bottom of such well. Earth privies and earth closets, with no vault, pit or depression below the surface of the ground, shall be excepted from this regulation, but sufficient dry earth or coal ashes must be used daily to absorb all the fluid part of the deposit, and the contents must be completely removed at least once every month.

SECTION 18. All privy-vaults, cesspools or reservoirs as above named, shall be cleaned out at least twice a year; once in the spring, not later than the 15th of May, and once in the autumn, not earlier than the 15th of October. From the 15th of May to the 15th of October of each year, they shall be thoroughly disinfected by adding to their contents, once every week, from one to four gallons of a disinfectant solution, according to the size of the said vault, cesspool, or reservoir."

In the cavernous limestone regions, manifestly the only safe plan for a large town which is without sewerage to adopt, is that here suggested, of water-tight, cemented cesspools, cleansed out and disinfected at frequent intervals. In villages the earth closet may be made use of as less expensive, and equally free from danger if properly attended to. But the leaking cesspool always has its risks, and, above all, the water-well turned into a cesspool, in a region presenting this curious geological formation as described in the letter from W—— is an abomination, an instrument of death; and the man who creates or maintains such a nuisance may be unknowingly guilty of manslaughter by the wholesale.

In conclusion, I would call attention to the following extract from a recently issued circular of the State Board of Health, prepared in the hope of bringing about a more general use of the earth closet in rural districts. It is principally extracted from the Chicago *Sanitary News*, and is from the pen of Mr. J. C. Baylis, a well-known sanitarian.

"When water-closets cannot be made available, the earth closet will be found of the greatest convenience and benefit. In addition to the well-known dangers attending the neglected accumulations in privy-vaults, few things are more destructive to health and comfort than dependence upon one of these dreadful out-buildings. A visit to one of them involves an amount of exposure in cold weather which even strong men have reason to dread. In the case of women, children and invalids, what can be worse than a plunge out of doors in cold or stormy weather, usually without the precaution of extra clothing or overshoes, for a visit to the foul shrine of Cloacina? The neglect of regular attention to the calls of nature, which the dread of this exposure induces, tends to encourage women and children in disregarding them as long as possible, until the evils inevitably attendant upon the habit of constipation, much too prevalent in this country, are induced and confirmed. The head of a family who makes no better provision than an out-door privy for the needs of his household, neglects the most obvious as well as the most selfish of his sanitary duties. The accompanying sketch requires but brief explanation:

"The body is a plain pine box. Its sides are not over 14 inches high; its depth is 18 inches (measuring from front to back), and its length about 30 inches. It is divided into two compartments, one 18x18 inches, and the other 18x12 inches. The larger of these compartments has no bottom; the smaller has a tight bottom. On top are two covers. The lower cover, hinged to the upper edge of the back, extends all the way across both compartments. In this is cut the seat,† over the center of the larger compartment. The upper cover is hinged to the lower one, and may be raised independently. It is made the size of the larger compartment only, both covers having a little overhang to facilitate lifting them. The material in, and work on, such a box will cost anywhere from $2.00 to $3.00, according to the amount of finish put on it by the carpenter.

"The receiving vessel is a galvanized iron coal hod, as large as will stand in the larger compartment with the covers down. The smaller compartment is filled with dry earth, ashes, peat-dust, or whatever else is used as deodorizer, and a little hand-shovel or scoop, is laid in. The closet is then ready for use, which should be preceded by throwing into the coal hod as much of the dry material as is needed to cover its bottom an inch deep. When used, the upper cover is raised, exposing the seat. After use the lower cover is also raised, uncovering both compartments. A small quantity of the dry material is then taken in the scoop and sprinkled over the contents of the hod. A quart is usually more than sufficient. This operation is repeated whenever the closet is used, until the hod is full, when, of course, it must be emptied. Its contents will turn out as a solid mass, inoffensive to sight or smell. Even the most fastidious person, with strength enough to carry the full hod out of doors would make no objection to emptying it. Occasionally, it is well to air and sun the hod after emptying. No other cleansing is required. It is better not to use an earth closet as a urinal, but so much of such use as is incidental to its employment as a stool in no respect interferes with its satisfactory workings. Slops should on no account be poured into it.

"The best of the materials for use in an earth closet which can be had without expense or trouble, is the fine siftings of anthracite coal ashes. Ashes from bituminous coal are not adapted to the purpose. Dry, loamy earth, or leaf-mold, will answer very well, but it is troublesome to dry and store it. It cannot be had dry enough out of doors, even in mid-summer. *Sand is useless.*

"Discreetly and decently used, an earth closet gives very little trouble. If ashes are thrown in after each use, it will not require any attention until the receiving vessel is full. The object of leaving the larger compartment bottomless, is to facilitate cleaning. More or less ashes will be spilled around the hod, and this should be swept out frequently. By raising one end of the box, the floor can be swept much cleaner that the bottom of a box could be without turning it over.

"*Such an earth closet can be placed and used anywhere indoors.* No doubt it could be made a nuisance, especially if boys were permitted to saturate the wood with urine, if a person using it should forget to use ashes, or if the hod were left to become overfull and matter intended to be held in it should roll off on the floor. It needs attention like every other good thing, but, given as much care as would be bestowed upon any other article of furniture, it meets all the requirements of a safe and convenient indoor commode."

NOTE.—The hole in the seat should be long from front to back, but narrow from side to side, never made circular with a pair of dividers, as a country carpenter will invariably make it unless otherwise instructed. The proper dimensions are 11 x 4 inches. The edges should be moderately beveled. This shape will make the act of relief much easier and tend greatly to prevent that painful disease hemorrhoids.

DRUNKENNESS: ITS OBJECTIONS, CAUSES, AND PREVENTION BY LEGISLATION AND OTHER MEANS.*

BY A. H. P. LEUF, M.D.,
Of the University of Pennsylvania, Philadelphia.

Drunkenness may be defined as a temporary loss of power to co-ordinate the operations of the mind, or the movements of the voluntary muscles, or both, due to the inbibition of alcoholic beverages, such as wines and the spirituous and malt liquors.

The *objections* to drunkenness are manifold, and mostly self-evident. That continued habits of inebriety will in time break down the general health, no one can deny. In accordance with the well established truth, that the health of an offspring depends upon that of its progenitor, it must be acknowledged that habitual drunkenness begets children of feebler vitality than would have resulted if the parent were of sound body. A well established rule is that we transmit our special defects to our descendents. Add to this the fact that the mind of the drunkard is much deteriorated, and it follows that his offspring will be endowed with a feeble intelligence and a defective nervous system. Defects of this kind are not outgrown, but continue to exist unless stamped out by death. From this it is easy to see that the defects generated by over indulgence in alcoholics are of two kinds; the immediate, which are developed in the victim of the habit, and the remote, which are developed *pari passu* with the offspring through descending generations. Union by marriage with a person in vigorous health often enough modifies the degenerate tendency, but only modifies; it does not eradicate.

Drunkenness again has an immediate effect upon those dependent upon its victims, though born previous to the formation of the habit. So, also the wife, or husband, as the case may be. Children and other dependents suffer from impoverishment, privation, exposure and neglect. They live in houses not as good as they would be if all the earnings were properly expended. They suffer from demoralizing example. They loose and never attain the respect necessarily due a proper parent. They lack food in quantity and in quality. They lack warmth in winter, and too often cleanliness all the year round. Wives or husbands, as it may happen, in time become disheartened, careless and indifferent. The effect of these changes are powerful upon children. Bad example has its effects not only upon relatives, but friends and acquaintances, and even strangers. The moral supposed to be taught by these practical lessons are not implanted as often as the vice is aped.

Moral deterioration is therefore the rule among those (especially with the ignorant) who come much in contact with drunkenness. Physical suffering and privation go hand in hand with moral degradation in dependents as well as in the victim; in the latter from over-stimulation and the poisonous effects of repeated over doses of alcohol in various forms, and in the former from privation, exposure, often filth and general demoralization.

The education of children becomes neglected because of the impoverishment that compels them to leave school and become wage-workers at a too tender age.

When we bear in mind that the safety

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* Read by invitation before "The New Century Club" of Philadelphia, on Wednesday, October 5, 1887.

of the country depends in many ways upon that of the family, it is not difficult to see that drunkenness is an important factor in the consideration of our body politic. The degeneracy of our times in certain directions is already very evident, and due to many causes, not the least of which is the vice under consideration.

The same objection that holds against inebriety as regards the family also holds good in reference to the country at large. The same danger threatens a commonwealth that menaces a family. In an instance of the kind now being considered, the family is the first to suffer. The effect upon the organized political body is apt to be more severely felt at a later day.

As drunkenness and its directly and indirectly resultant train of general physical and mental decay, and eventual pauperism surely increases, the prosperity of the land will diminish; as a larger proportion develop and inherit defective organisms, the average of health throughout the country will fail. So in like manner will our high grade of intelligence, upon which we, from mistaken causes, too often egotistically prize ourselves, sink to a lower and a lower level until it rests—no one can say where.

That drunkenness may modify the health, strength and intelligence of a whole nation, therefore, no one can deny. Eventually it modifies the race, and because of lessened vitality and degenerate intelligence, there will be an arrest of progress in the arts and sciences, as well as in trade and manufacture, and eventually an indefinite retrogression. Who will deny, who can deny, in the face of such facts and their logical conclusion, that drunkenness is a menacing evil, and that almost any means are justifiable that will, with certainty, eradicate it from our homes.

The *causes* of drunkenness are not only interesting, but a knowledge of them absolutely necessary to a correct consideration of the question as to how this evil should be corrected. The importance of an accurate knowledge of a cause for any effect it is desired to remedy or remove is so well-known to accomplished physicians that they always make the most diligent search for it that a cure may be the more readily obtained by its removal.

Opportunity certainly ranks high as a causative element. Were there fewer saloons, or none at all, drunkenness would be a rarity. This, however, is not altogether true unless the diminution takes place in a natural manner instead of its being forced, as in prohibition. Prohition interferes with personal liberty and causes resentment, and thus not only defeats its very object, but sometimes increases the evil by exciting stubborn and reckless opposition.

Association is another cause, for it is easy to be gradually led into the habits of those with whom we have social intercourse.

Custom no doubt ranks high in inducing people to continue the habitual indulgence in intoxicating beverages. There are also the customs of business, of districts, and even of nations, and the social one of asking a friend to take a drink.

Habit is perhaps nothing but the custom of an individual, and perhaps the surest way to eventual drunkenness, and also the most difficult to overcome.

Trouble is a great factor in the induction of inebriety, for many deliberately embrace a life of drunkenness to drown their sorrows. Were no facility offered for this refuge (?), its effects would not be seen nearly so often as now.

Overwork leads at first to occasional stimulation, then necessity for stimuli occurs oftener, until at last it becomes a constant requisite. The habit is then formed and drunkenness too often follows. Hard work does not prevent sleep, nor does it, as a rule, occasion so much exhaustion that a refreshing slumber is often unattainable. The *worry* and *anxiety* coupled to so much work, especially of a business kind, interfere with sleep and digestion, and hence the necessary nocturnal recuperation. This unnatural straining of the nervous system leads to the habit of periodical stimulation. Brain-workers desirous of gaining a certain goal within a given time, goad on an overworked nervous system by stimulation. The pleasant effects thus experienced lead to frequent repetitions and eventually there results drunkenness, or a shattered human mechanism, or both.

One word more as to cause. The mistake is generally made of supposing that people become drunkards through a relish for their habitual beverage. Very rarely though, if ever, does it happen that a person becomes a drunkard purely through the relish he has for intoxicating drink. The stimulating effects upon the mind and the general sense of well-being is what causes over-indulgence. Ice cream and ices taste the same in all kinds of weather, and yet they are much more relished in the warm weather. This is because the effect is more gratifying at the latter time. There is nothing pleasant or agreeable about the taste, smell, or sight of either opium, chloral, or cocaine, especially if taken by means of a hypodermic syringe, and yet see how many we find the unwilling slaves of these drugs. The effect is the thing desired. The opium slave takes it to relieve pain, a pain that increases till it is arrested by the desired drug, or otherwise treated and cured by a competent physician. The chloral slave takes his dose to overcome what seems an otherwise insuperable sleeplessness. Palatability, therefore, is never the cause of drunkenness, for this is always due to the uncontrollable desire to continually reproduce temporary gratifying effects upon the mind and body at large.

The *prevention* of drunkenness divides itself into two methods—the *legislative* and the *non-legislative*, or the direct and the indirect.

The *legislative* means should be as radical as is consistent with justness and our constitutional liberty. Prevention must not be at the expense of personal liberty. The advice of "Junius" to his countrymen not to permit, at any expense, the most trivial encroachment through the king's prerogative on their constitutional liberties granted them by their hard earned *magna charta*, is just as applicable to us in our day on this one of many burning questions of the time—Prohibition.

What efforts have been made at the repression of drunkenness, and what is now being done and advocated for the abolition of this degrading vice?

Legislation has generally been essentially prohibitory. This absolute restriction seems most often to have suggested itself to the well-meaning as the most effectual plan. Most laws have tended in this direction. They have been, and now are, absolutely prohibitory, as in some of our prohibition States and local option States; and they have been, and are now, partly or periodically prohibitory, as in those States where the closing of saloons upon Sundays is demanded by law.

The Sunday prohibitory laws are not beneficial, for they fail in the accomplishment of the object for which they were framed. They are derogatory to the community they are designed to benefit, because they are practically nul. Being really inoperative, they create disrespect of the law. Partial or Sunday prohibition fails, because it is not popular. Anything is popular that is in sympathy with a largely preponderating majority. The minority only favor prohibitory laws in any form, and of these many are pretenders because of interested motives. Why, then, is it that this minority succeeds in making laws where the majority rules? To this the reply may be made, that the doctrine of majority rule is correct numerically, no doubt, but it is the *active minority* which in most instances carries the day by controlling the majority. It often does so by holding the balance of power between two large parties. The popular will is sluggish in manifesting itself. It is only seen under high pressure, and then voices itself through but few chosen champions. Prohibitionists, therefore, have succeeded, in so far as enacting laws may be considered success, though in the minority, because of their activity and the indifference of the maority. Practically the Sunday law is a dead letter.

The present laws put a premium upon deceit, for they compel men to get drink on the sly, and against the law. This is always bad, and especially its momentum. Laws should be respectable. Local option is a good thing, but it must be very local, in fact localized to the single individual. That's where it belongs. Nature put it there, and there it will stay. Nothing will avail much that neglects this fundamental principle.

Absolute prohibition too, has also been shown to be a failure, and from the nature of things it is utterly impossible that it should be otherwise. That the traffic in liquor, and drunkenness itself, are enormous in the so-called prohibition states, no one justly claiming to be well informed can deny. This condition of affairs can only exist against both the spirit and letter of the law. The law, therefore, instead of abolishing an evil, proves itself incompetent to accomplish the end desired, and creates instead a disrespect and disregard of the law itself. The law is evaded through deceit. It is not becoming to any man to go sneaking through guarded hallways so that he may enjoy the personal liberties granted him by the constitution of his country. Thus it is that prohibitory laws put a premium upon deceit. The least deceitful, the frank and independent, are incensed at the unwarranted and apparent interference with liberty and deliberately break the law. A law that has such effects is wrong—is bad—is radically wrong. Therefore Junius' advice to his countrymen to resist the slightest infringement on their liberties is equally applicable in an instance of this kind.

A legislator deserving the name takes into consideration what is called the momentum of any proposed law. Laws effect the future through precedent and by establishing custom. The custom grows. This is the momentum of the law. It may have a certain effect to-day, and a number of years hence will reach deeper and much further. Emergency laws may be defined as such that are enacted in periods of great common danger to avoid a threatened immediate evil to the community at large. Personal liberty has to suffer in such instances for the common weal, *i.e.*, for its own benefit. Were drunkenness a great *immediate* danger, then prohibition would be called for and cheerfully submitted to until the danger no longer existed. Let the immediate danger be gone, and the opposition would be the same as now.

The indication for general prohibitory emergency laws does not exist because the country is not in immediate danger. The danger from encouraging law breaking by the enactment of prohibitory legislation is greater than the so-called curse of drunkenness.

Civil damage acts have been passed

which enable any responsible dependent or interested relative of a drunkard to sue a saloon-keeper for damages if he permits a drunkard to become intoxicated, through his agency, after having been notified in writing not to do so.

The object of this law is good, and its justness beyond question. The principle of personal liberty remains unviolated. It designs to punish unconscientious liquor dealers, and provides financial redress for the wrongs of injured dependents. These laws, however, are inoperative, and this because they are defective.

Laws must be popular to be operative. Popularity is, as a rule, attainable only after the common mind has been taught. Agitation, continuous, sincere and sensible agitation, will educate the ordinary mind and interest the indifferent and so create a *popular demand* for a curb on this evil. Then if *judicious* laws are framed, and social machinery to back them is set in motion, they will be enforced, be supported, prove effective, and accomplish the desired end.

I would propose the following plan for consideration, as well as adoption, if found sufficiently promising after thorough discussion.

The *legislative* portion of the plan consists in a high license and civil damage act. Let the annual license be, say five hundred or one thousand dollars ($500—$1000). This would throw many out of the business and diminish the number of saloons. About this there can be no doubt.

To this could be added a civil damage act going further than present ones do. I would have it permit drunkard's dependents to sue all saloon-keepers for damages who would allow enough drink to be imbibed in their establishments to cause intoxication. I would have such a suit competent without previous notice to the saloon-keeper. A jury should decide in all instances of whom a drinker had obtained the requisite amount to cause intoxication. I should hold liable the first saloon-keeper in whose place inebriety had begun to manifest itself, and would also hold accountable the keeper of all places in which liquor might subsequently have been imbibed. To be consistent, it would be proper to consider it a *criminal* offence to sell to, or cause an intoxicated person to take, any additional drink. A saloon-keeper should not be exempt from suit if he has suffered to supply the liquor gratis instead of having sold it. I should even advocate giving the culprit the right to sue if he had given previous notice to the liquor dealer or his representative that he desired not to have enough sold him to cause intoxication. In all instances, the defendant should be considered not guilty of offence, or be liable, if it could be shown that he exercised reasonable judgment to stop the sale of liquor to the plaintiff at a proper time.

This excessive (?) but not unjust liability would cause many to leave the business who could, and otherwise would pay a high license. The redress thus placed in the hands of dependents would be freely exercised, especially if copies of the law accompanied by a simply worded explanation were distributed in all the poor districts of our cities. Temperance and benevolent societies of all kinds could arrange with sufficiently competent, yet not too expensive, legal counsel to prosecute cases for the poor. Moreover, it would be consistent with common sense to vest the right of suit in the charity commissioners in case a drunkard becomes, or is occasionally, a charge of the county.

To make this proposed law operative and insure the getting of the money awarded by a jury in a civil suit, it would be requisite to compel each saloon keeper to give a bond sufficient in amount to cover the probable costs and damages of a first suit—say two or three thousand dollars ($2,000–$3.000). This would prove a further obstacle to going into the liquor business, and those who did make the venture would have to be most circumspect in the sale of their goods to avoid suit. The difficulty in getting bondsmen would be great with a good civil damage law strictly enforced.

Any one convicted a second time of causing drunkenness, should have his license revoked and be denied all right to any future renewal.

The *non-legislative* plan which I would suggest is expressed in one word, *counter-attractions;* saloons, modestly or elegantly fitted up, as occasion might have it, but without intoxicating beverages. Here could be sold coffee, tea, chocolate or coca, either hot or cold, and soda-water, lemonade, root beer, milk and other refreshing drinks, with ice cream, ices, cake, sandwiches, etc , etc. Add to this a smoking-room (if necessary), checkers, chess, cards, dice, pool and billiards, and the attractions would more than equal those of our present saloons. Moreover, a reading-room containing files of the leading dailies and other periodicals would be an additional valuable adjuvant. A ladies' saloon could be added with benefit.

The character or tone of these total abstinence saloons would have to be modified to meet the tone of the neighborhood in which they are expected to serve as counter attractions. This requires but a passing mention, and proper details would suggest themselves as occasion demanded.

Another and important point is the advisability of putting these saloons under the management of some respectable ex-saloon keeper or competent bar tender. These men make the other business attractive and profitable. They could do the same with the new enterprises, and would be all the more apt to do so if they were given an interest in the business. Many who make a living selling liquor and beer are total abstainers, and to them it would be a most acceptable blessing to obtain employment or a business interest in a total abstinence saloon. It is puerile to expect inexperienced men and women to conduct an establishment of the kind proposed on a profitable basis. If such proposed saloons are not self-sustaining, they become a drag and an evil. Proper management would make them independent.

The necessity of quickly responding to pressing calls of nature frequently induces men to purchase the privilege of relieving themselves by taking a drink in the first saloon they see. It is the duty of the community to provide abundantly for such emergencies. A frequent and underestimated cause of drunkenness is kept alive through the negligence of our political representatives in not making these necessary provisions. Many such relief stations could be judiciously located throughout our large cities with decided benefit. They could be indicated by a suitable and uniform sign by day, that could be illuminated at night. The station itself could consist of a neat and moderately sized room, containing a central fountain. Two rooms, one for men and another for women, might extend from this as we now have them in our ferry-houses and railroad stations. Wash bowls and soap, with clean towels, could also be provided. Combs and hair-brushes, too, might be at hand. The place could be heated in winter, while in the summer it could be kept cool with revolving fans. A moderate expense would keep the drinking water cool in the hot weather. These stations might be kept open during certain hours, the time differing with the demand in various parts of a city, while some could, with advantage, be "always open." Many of our legions of crippled or otherwise disabled veterans might in this way find easy and remunerative employment as janitor or keeper. The expenses of such stations could be largely defrayed by voluntary subscriptions in those cities whose liabilities are limited. Otherwise it would seem best to conduct them through the government.

Summary.—High license would diminish the number of saloons. The liability of the saloon-keeper for damages and the requirement of bonds to the extent of at least a couple of thousand dollars would still further limit the number. Bondsmen could not so readily be found for this amount because of the great probability of eventual forfeiture.

With fewer saloons, many causes of drunkenness would be prevented or much mitigated. Most men prefer a place in which they can talk and find opportunities for instructions and amusement without the probability of disagreeable scenes and interruptions, to a place where drunken men would probably be present to mar quiet and pleasure. Few at first enter saloons to drink as much as for amusement. Most of them would naturally be absorbed by the new saloons even though the liquor saloons still existed in this present number and form. If we want people to stay at home, it must be made pleasanter to stay in than any other place. The same rule applies here. In short, make the counter-attractions suggested and they would be popular. They would be patronized.

Dependents of drunkards, if furnished legal aid, would put the finishing touches on the liquor and beer evil through successful damage suits. Therefore saloons that survived could only do so by being conducted in a respectable and conscientious manner, and these few would be a genuine necessity. The law could include pharmacists in the liability for damages with some restrictions. They must not be forgotten.

If these suggestions will meet some attention and stimulate discussions, I shall feel that they have been of some avail.

RURAL SANITATION.*

BY O. W. PECK, M.D., HEALTH OFFICER OF ONEONTA, N. Y.

There are those who, but grudgingly, listen to an address upon sanitary matters, and who contend that gatherings like the present should be devoted to the consideration of the best and most improved methods of raising and marketing this, that or the other crop; the manufacturing and disposing of this, that or the other dairy commodity; the rearing of stock and matters solely which, at a glance, are seen to be matters of profit or loss to the farmer.

The successful raising of a crop may depend upon other factors than the planting, cultivating and harvesting. Insect ravages may bring to naught the labor of weeks and months. Suppose one should say, "This is no place to study entomology, no place to learn how to destroy insect pests. *We* are engaged in the study of agriculture; let us learn how to sow and plant, to cultivate and harvest, leaving the insect pests to take care of themselves."

Such remarks would not receive endorsement at the hands of intelligent farmers, for of what use would be the expenditure of time, money, strength and sweat if the enemy was to devour any considerable portion of the crop at maturity or at any time along the line of growth? Matters that are frequently considered of secondary, not infrequently demand recognition as of primary, importance. Impressed with the importance of health in the farmer's family, and knowing that the lack of it is not infrequently due to the unsanitary surroundings of the home, I have yielded to the solicitations of the secretary of this society and will occupy a limited portion of your time with a few thoughts—practical thoughts—that you can take home with you, upon a subject of which for some years I have been an apostle, to wit: "*Rural Sanitation or Sanitary Homes*."

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* Read at the Poughkeepsie Farmer's Institute.

The way to reach civilized man is, as a rule, through his pocket. Convince him that a thing will pay and he will attend to it. It would seem that in the matter of health that its preservation would not be placed upon so sordid a basis, yet truth compels the admission that such is too often the case. Does sanitary science pay? Does it pay the public and individual cost? Would it pay you or your neighbor to prevent sickness?

Let us see. In the facts and figures that I may place before you, you must accept them as truthful, for the time is too limited to quote authorities to any extent or to give close figures.

What is the value of a human life? English statisticians have estimated the value of a child to the public at birth at $12.50, at 10 years of age at $260, at 20 $2,000, and at 20 to 40 at $615 per annum. Now it is very difficult, impossible in fact, to fix an average of value, for there are some lives of inestimable value, while others are valueless; yet it will be fair to estimate it at $1,000. Most authorities would place a higher value upon it.

According to the census of 1880, there died in this country during the year 756,893 persons. It would be a very low estimate to place the number who died from preventable diseases as one quarter of the whole number, yet in order to be within bounds we will do so, and we get as the result 189,223 who died of diseases from which they need not have died, representing a direct money loss to the country of $189,223,000. In the state of New York we gather from the monthly reports of the state board of health that 89,301 certificates of death were received at that office, so that they estimate 90,000 deaths during the year. It is quite safe to say that 20,000 were from preventable diseases, representing a money value of $20,000,000.

The foregoing is a cold, bald statement of a given number of deaths, representing as near as can be calculated a definite money value. Yet, unpleasant as the facts and figures are for us to reflect upon, there is more to be told. It is estimated that, taking all ages into consideration, not more than one in ten sick persons die of any given disease. Yet far from all recover. A certain proportion—and not a very small one—are left with healths impaired. A glance over any community will convince any observer that the absolutely well are not greatly in the majority, perhaps in the minority.

The columns of nearly every paper we take up, crowded with the advertisements of nostrums for which millions are spent annually, is a silent yet convincing proof that invalidism is prevalent throughout the country. The expense account incident to sickness, the loss of labor, if an adult, to the farm or household, the time and expense of nursing, doctors' bills and other items, direct and indirect expenses, to say nothing of more or less chronic invalidism—it is impossible to estimate, yet it is probably equal and perhaps more than equal to the loss by death.

The farmer's family should be, so far as freedom from preventable diseases is concerned, the healthiest in the world. Perhaps they will compare favorably with those in other walks of life, yet that they do is owing to the fact that they have become acclimated to the noxious odors that in too many instances assail the homestead, and to another fact, that the wind—the wind that bloweth where it listeth—dilutes and carries away that which might otherwise poison. In proof of the acclimation theory, witness how often it happens that the city boarder sickens and dies; how often the grandchildren or their mother who have come to enjoy the country and gladden the hearts of the old people, are stricken down and die from breathing the air from the old stone or wooden drain at the back door, while the resident grandchildren escape, unless, perhaps, taken down by direct contagion. These are facts that it will pay you to stop a few moments and consider.

Haven't you a wife or a daughter at home who is the subject of something you nor the doctors know not what—"biliousness," "dyspepsia," "stomach complaint," "hysterics." or the fashionable (made fashionable by incessant advertising) "kidney disease," or who is the victim of some of the thousand and one diversified and even unclassified forms of nervous diseases? Haven't they had "doctors of high and low degree" and of no "degree" at all, regulars and irregulars, "stick doctors" and water cures? Haven't a score or more of the neighbors prescribed, and haven't they had liver pads and kidney pads and all sorts of kidney cures, and all without avail?

Did it ever occur to you that these invalids were suffering from poison that they were constantly inhaling? Didn't you ever see the invalid wife or daughter of a farmer forget her invalidism by a month's sojourn at the seaside, perhaps to take it up again after a few weeks' residence at home?

The question arises now, What can we as farmers do to escape from these evils?

We reply that the three prime factors of health are pure air, pure water and good drainage. See to it that your homes are amply supplied with the three requisites. Our time is too limited to go into details, yet we will endeavor to give some hints which will be of value.

These prime factors are needed more by the farmer right in and around his house than in any other one place. In a paper of this kind it is difficult to decide just what to say and what to leave unsaid. An exhaustive paper would consume too much time. You must therefore construe what I may have to offer as pointing to the guide-boards rather than an invitation or attempt to take you over the whole road. In this climate all residences are, or should be, built over a cellar dug to a considerable depth. This hole in the ground or cellar thus becomes, in a sanitary point of view, the most important room in the house. Cellars should at least be cemented on all sides and at the bottom; yet what is better, because absolutely air-tight, is to cover sides and bottom with asphalt. This not only prevents the circulation of ground air, which may be impure, but it protects it from moisture. Let no one suppose that it is of small importance how the cellar is arranged if the other parts of the house are kept dry and ventilated. The air in the cellar is quite likely to find its way to the attic. If any doubt it, let them boil onions or sourkrout in the cellar and then go into the attic and investigate. A damp cellar under a house means rheumatism, "malarial troubles" and consumption. It is not worth while to give you examples or cite instances to prove it. It is a settled and recognized fact.

How few cellars are concreted or even cemented. Referring to the subject of dampness in a residence leads me to say that no house is built as it should be unless it be built with a "damp proof course;" that is, an impervious course of brick and asphalt, or slate or tiles, air and moisture tight, laid inside the wall from the foundation to the eaves. (Since writing the foregoing we notice that Mr. Roesch has introduced into the assembly a bill requiring basement ceilings in New York city to be built in such a manner as to be impervious to moisture.)

Some people fill in the space between the studding with brick or sawdust. These and similar materials attract moisture, and when the warm weather comes and the moisture begins to evaporate, the air in the house is chilled. Says a late number of Chambers' Journal: "Dryness in this climate is so essential to health that any building which in its floors, walls or roof sins by admitting moisture, should be rejected as a place of residence by those who value their healths."

Keep cellars clean. Keep but few vegetables, if any, in the cellar at a time. Decaying vegetables, stale brine, dead rats and mice, etc., in short, any filthy or decaying matter in the cellar, is a menace to the inmates, for the reason that certain kinds of disease germs find in such matters their most congenial home. One of the best ways to protect the inmates from the approach of disease through the cellar is for the farmer's wife to visit it often, and for her to *insist* upon cleanliness and ventilation.

There is an anecdote told of a German bride who desired to be a good housewife, and who had a wise father. Among the numerous wedding gif s was a golden casket from him, and with the injunction not to pass it to other hands, for it held a charm which, if kept in her sole keeping, would be of inestimable value to her as the mistress of a house. Not only was she to have the entire care of it, but she was to take it every morning to the kitchen, the cellar and the stable, and to remain with it in each place for three minutes. After the lapse of three years, the father was to send the key that the secret talisman might be discovered. Directions were followed, the key sent and the casket was opened, when it was found to contain a parchment upon which was written: "The eye of the mistress is worth a hundred pairs of servants' hands." The wise father knew that a practice of inspection followed faithfully for a period of years, with such results as we may reasonably believe followed, would be perpetuated—that the casket and hidden charm would have accomplished their mission.

Before leaving the cellar, the most important room in the house—the key to the situation—I must say, never take air from the cellar for heating purposes; certainly not from an unsealed cellar, for the reason that the ground air which is constantly passing into the cellar is more or less loaded with impurities, chiefly with carbonic acid, the very element we mostly expire, and for the reason that the air may contain disease-producing germs. Prof. Tyndall has demonstrated that some germs require boiling for the space of eight hours before losing their vitality. Hence it follows that their vitality might not be destroyed in their rapid flight through the furnace—certainly not if, as is often the case the fire was low. In fact the greatest danger is when the fire is low or entirely out. If a furnace is used, take air at some distance from the ground.

It was not our intention to touch upon the subject of heating the house, and yet we seem to have drifted there, and having said what we have in relation to furnace heating, we will add a little more. Keep houses warm, say at from 60° to 70°—the old people want it warm—and keep the temperature as equable as possible. If furnace or steam heat is not used, the next best appliances are the modern stoves. The nickel plate amounts to nothing, but the ease and certainty with which fire can be kept from fall unto spring commend them to us. It is better from a purely economical as well as from a sanitary standpoint to keep a constant fire. Many have an idea, fostered by poetry and sentiment, that the old-fashioned fireplace is the most healthful manner of heating a house. This is not so. It is not only a wasteful way, but an uncomfortable and unsatisfactory way, unless it be in spring or autumn. There is a constant draft up the chimney of air from the room, which is in turn supplied from the open doors or the cracks and crevices from adjoining rooms and windows.

No better contrivance to inaugurate and perpetuate a "cold" than an open fireplace fire. The children of the fireplace era, as a rule, had a cold all winter long, as the abundant and constant secretion from their nostrils, and the shiny condition of the boys' coat-sleeves, gave ample evidence. Now the urchin with the polished sleeve and "lamb-legged" upper lip is the exception and not the rule.

The Water Supply.—The water supply for the household is usually obtained either from a spring or well. Probably the safest way, so far as purity is concerned, is to obtain water from a driven well. There is less danger from surface drainage, percolation or soakage than in the case of a dug well. A driven well cannot always be had in a desirable situation, and probably a very large majority of farmers' families are supplied with a dug well. The wall of such a well should be laid in water-cement, to prevent contamination from barn-yards, stables, privy-vaults (a thing that should not be tolerated), cesspools, etc. Care should be exercised that surface drainage be excluded. If possible, have the well upon the opposite side of the house from the stables, privies, drains and cesspools. Permit no drain to pass within 100 feet of the well unless it be absolutely water-tight. Drains are so apt to get out of repair from the action of the frost, and from other causes, that it is best not to have *any* drains in the vicinity of a well. A well represents an inverted cone, the apex of which is the bottom, and will drain an area of earth which will equal in diameter the depth of the well, and under favorable conditions a much larger area. Spring water, if used for drinking purposes, should receive the same care as a well. Animals should never be permitted to drink from or stand in the vicinity of a spring, the water of which is used for drinking. A spring may become polluted from the same want of sanitary care that would pollute a well. The chemical constituents of springs are governed by the character of the soils or geological formations through which the water passes. The soil contains 250 times as much carbonic acid as the air, and this aids in dissolving various substances on the passage of the water to the surface or point where taken for use.

As stated in the early part of this paper, time, neither yours nor the writer's, will permit of the quoting of authorities to any great extent for the proving or demonstration of the facts that I may lay before you. The importance, however, of the water supply leads me to illustrate by a few examples both the porosity of the soil and the danger of contamination through that avenue; and it will, at the same time, illustrate the facility with which the atmosphere of a house may become vitiated as well.

In 1879, every member of a family of eight persons, residing in a town in Massachusetts, had typhoid fever. The discharges of the first one attacked were thrown into the privy-vault without being disinfected. Within a period of twelve days of each other the remaining seven members of the family had the disease. A couple of bushels of salt were put in the vault. The presence of salt in the well was soon apparent.

Dr. Budd, of Bristol, England, relates the case of a lady who, upon the advice of a local chemist, flooded her house-drains with a solution of carbolic acid. In a few days she returned to her adviser, seeking a disinfectant that had no odor, as the water in her own and some of the neighboring wells was so offensive that it could not be used.

A barrel of petroleum buried in a field by leakage rendered the water in wells 900 feet distant unfit for use.

In 1883–84, fever of a typhoid character prevailed to such an extent in the village of Bath in this State that the trustees of the village requested the State Board of Health to investigate and ascertain, if possible, the cause. The State Board complied with the request, and were not long in concluding that the disease was due to *soil pollution*, from privy-vaults and cesspools. It was brought out during the investigation that well water was contaminated by the refuse from the gas-works buried at a distance of 1000 feet, the water at 800 feet "showing very marked discoloration, and having a strong taste and smell." These instances will serve to impress the fact that the soil is more or less porous, and teach, we trust, the lesson that serious danger is liable to come to us through that channel. The salt, the carbolic acid, the petroleum and the gas were detected by the senses, yet the pollution from the privy-vault and drains—sewage—was not. From this we learn that dangerous pollution may exist in water and not be recognized by the odor or taste.

Good drainage was mentioned as one of the prime factors in the preservation of health. The subject is so large and important that the consideration of it must be omitted from this paper, the limits of which are circumscribed. Time admonishes us that, while in many respects it is incomplete, it is already too long. Yet we feel that a few more words should be said; an appeal should be made in behalf of the women and children, particularly in behalf of the former. We urge you to provide out-house conveniences that can be reached in cold weather without wading through the snow, and so constructed that cold draughts of air cannot enter; also, that you so arrange it that the weekly wash can be dried without the wife or servant being obliged to go out of doors. The number of deaths caused by wading through the snow, getting clothing and ankles cold and wet, exposure to cold blasts of air while perhaps in a perspiration from the steam-bath of the wash-tub, has never been set forth in statistical form; but that the "cold" is caught that results in pneumonia or consumption is too self-evident to require proof. These sources of danger are above ground, can be seen and remedied, and an excuse for their existence it would be difficult to find. The week's washing may look whiter dried in the open air than in the attic. So the pale face of the wife in the casket may look whiter than the same ruddy face has looked in health. Does the white linen compensate for the blanched cheek and lips, so soon to be laid away forever?

Does it pay the farmer to disregard sanitary laws and the laws of health?

PHYSICAL CAUSES FOR MENTAL DISEASES.

BY GEO. D. STAHLEY, A.M., M.D.,
EASTON, PA.,
Lecturer on Hygiene at Pennsylvania College, Gettysburg.

(Concluded from page 63.)

Insanity following head injuries are of quite frequent occurrence, but their influence as a cause of insanity, particularly when the injury is slight, is not properly appreciated. The immediate effects of these injuries are not the only ones to be dreaded, for resultant mental disturbances may occur long after apparently slight wounds. As a glaring example of how a head injury, producing pressure on the brain substance, can be the cause of insanity, and by simply removing the pressure, the mental faculties can be again restored to the patient, I will quote a case which occurred under the care of Dr. Fletcher, of the Hospital for the Insane, at Indianapolis, Indiana. His patient by reason of a fall on his head from a scaffolding six years before, had become sleepless, at times would be rational, and then again would exhibit strong suicidal mania and treacherous homicidal proclivities; becoming sometimes so violent that it was necessary to restrain him by force. He had lost his memory, had epileptic convulsions, and had become an inebriate and a morphia-taker. There was a depression of bone on the top of this man's head, which on removal by the trephine exposed the brain the space of a circle one inch in diameter. The bone was depressed out of line of the internal surface of the skull-cap only "a little more than the one-sixteenth of an inch," yet forty-eight hours after this pressure was removed, the patient was a changed man. All symptoms of insanity at once disappeared, as did also his epilepsy and his appetite for stimulants and narcotics. After five months of continued observation, he was discharged restored. The record adds that "No camp-meeting conversion was ever more complete or effectual in the work of moral reform."

Two other similar cases, with equally satisfactory results, are reported by the same physician. This question of traumatism, or head injury, in relation to insanity, has been extensively and ably studied. Griessinger says that "traumatism may set up insanity immediately, whilst in other cases it does not appear for years after the original injury. The traumatism sets up an acquired predisposition, without detectable cerebral lesion." Schlager points out that these injuries are not always severe, and may simply be followed by slight mental confusion or dull pain in the head, and may terminate in insanity from one to ten years after injury.

Among the mental disturbances due to toxic agencies, eminent investigators report cases due to poisoning by iodoform, salicylic acid, the bromides, alcohol, carbonic oxide, etc. An able monograph of a French physician discusses acute diseases as causes of insanity. Scarlet fever, measles, typhoid fever and vaccination are also considered. Syphilis is a fruitful source of mental disease.

Now, from the foregoing, and from much additional evidence which I have not space to reproduce here, it seems evident that all the circumstances which are known to give rise to insanity act through the physical organization. This may perhaps be readily enough admitted when the attack can, by conspicuously glaring evidence, be traced to causes dependent on bodily conditions; but the case does not seem so obvious when the insanity is preceded by a sudden fright, by an unexpected calamity, by violent emotion, etc., because these are generally supposed to produce their effect on the immaterial spirit. But it requires very little acquaintance with the laws of nature to understand that, although these are immaterial agencies, yet they exercise a very marked and a very manifest influence on the bodily organization. How suddenly has a person in good health lost all sense of hunger on hearing, as he sat down to dinner, some unwelcome intelligence? How frequently do we see an attack of fainting brought on by some overpowering emotion. These and other instances with which most persons are acquainted establish beyond the possibility of doubt the intimate relationship that exists between the mental principle and the body, and prove that circumstances which act in the first instance upon the mind, do at the same time exercise a most important influence on the physical organization. These sudden mental experiences produce disturbance or paralysis in the general or central nervous connections which supply the parts or organs affected, and are often capable of making profound morbid impressions on the nutritive centres of the brain.

From the cerebro spinal system of nerves there are centres from which arise nutritive nerve influences which proceed to various focal points throughout the body. These "trophic centres," as they are called (from a Greek word, signifying nourishment) preside over the nutrition and development of the entire organization, and have been traced and located in those portions of the central nervous system which contain an abundance of a certain kind of cells, called multipolar ganglionic cells. In all parts of the body where there is a failure of nutrition or perversion of function, these nutritive centres are found to be at fault; there is a deficiency in the number of cells or a change in shape, size, or outline. Organic or functional disease in any part of the body presupposes an impairment of the nutritive nerve centre which supplies it; and there is no good reason to believe that the brain is an exception to this rule. In all cases of mental derangement, however varied in type, the normal nutrition of the brain is interfered with, its trophic centres are impaired, and the first thing to be done is to restore the nutrition of the cerebral tissues. Hence the key-note for the treatment of insanity is rest, a nutritive diet, and the best of tonic medicines. So eminent a man as Dr. Clouston maintains that "Many mental affections are the results of morbid trophic changes of purely nervous origin, and independent of the blood supply; and that mental depression, *per se*, is simply the functional expression of brain malnutrition." And again he says: "Over-mental work does not directly affect the blood vessels, yet it causes brain changes of the most serious kinds. Even when vascular changes are found, I believe them to be secondary in great measure to the alterations of nervous structure. The blood vessels are, after all, the servants of the brain tissue proper; and this has not been kept sufficiently in mind in the recent study of nervous diseases."

It seems, therefore, that it may be fairly regarded as an established fact, that the nervous system prevails over all the processes and functions of the body. Nerve force pervades every tissue and every fluid. It may be urged that the blood, the great tissue builder, is an exception to this statement, as it has a life and organization of its own and circulates through the system apparently independent of surrounding conditions, and it may be thought that it, of itself, is capable of nourishing the body or of inducing disease, without regard to nerve influence. But when it is remembered that the gland, or system of glands, which converts chyle into blood corpuscles, derives its own energy and nutrition from the nerve centre which controls it, it can be readily seen that unless this gland is itself healthfully influenced or energized, the product of its labors will be defective. The morbid organ will produce morbid results, and with deficient blood corpuscles streaming through the system, nutrition ceases and disease begins. Nerve influence and nerve control, is such a general fact in the animal economy, that we are compelled to regard it as the all important element in both health and disease. And as mind in its material and practical sense, is but the expression of normal or abnormal physical conditions, it is our duty to watch these conditions with great vigilance, and in cases of mental disease, to base our study and treatment of the cases on the symptomatic relationship here pointed out.

The so-called "moral treatment" of insanity has been adduced as an argument against the theory of its corporeal origin; but this, when properly viewed, really proves the contrary. In this method of treatment it is the object of the physician to remove all sources of irritation from the patient's mind, thus throwing into repose those faculties which happen to be excited, and endeavoring to exercise those which it is desired to arouse into healthy activity. In doing this it proceeds upon the same principle which leads a medical man to prevent his patient walking on an inflamed foot or reading with an inflamed eye. It is rest that is useful in disease of the brain, as well as in that of the body. Activity of an intellectual faculty is accompanied with vascular action and waste of nutritive nerve supply, and it is by the expedient of rest and change of thought, that the nerves recover their tone, and the blood supply becomes more equable. It is obvious, therefore, that however the expression "moral system of treatment" may suggest the idea that it consists in a series of metaphysical expedients directed to the purely immaterial part of our being, it is really a judiciously contrived part of the medical treatment, properly so-called, and acts upon the physical organization in the same way that other remedies do.

The expression to "minister to a mind diseased," is understood by a great many persons in a very literal sense, and as if the mind was a veritable personality, and always prepared to gulp down and be influenced by any of the pills, powders or potions that the medical man may prescribe. A twelve years' experience as an asylum physician has revealed to me many popular errors on the subject of insanity. In my intercourse with the insane, or rather with the relations of the insane, I have often met with those who brought their friends to our hospital as patients, in order, as they said, that we might "give them something for their mind," or, having "lost their mind," we were expected by some mysterious plastic operation, or process of vital grafting, to restore the lost part, and indeed often to endow the skull contents with mind, the like of which never had been previously possessed by the individual in any appreciable amount. These relatives would often declare the patient to be entirely sane, or even unusually intelligent, "but only a little melancholy-like"—"please and won't you give them something for *that?*" If, when on a visit to their friends at the asylum, a medical officer, whilst giving them a general statement of the patient's condition would mention the existence of a delusion of hallucination, they would at once break in with the query, "And are you giving them some medicine for *that?*" Looking to this idea, we were expected to have a special or specific medicine for each mental symptom; one kind of medicine "to pluck from the memory a rooted sorrow," and another to "raze out the written trouble of the brain." It is needless to say that practical alienists have no specifics, but that they treat the mind through the body, and in doing this, no organ is slighted, no function overlooked, no kind of tissue considered unimportant.

I cannot more fittingly conclude this article than by quoting the words of Dr. Kempter, Superintendent of the Hospital for the Insane, at Oshkosh, Wis., who is an enthusiastic and painstaking scientific alienist, and who, in closing an able report on the "Microscopic Study of the Brain" says: "It need hardly be said that one of the results of this investigation has been to place me among the ranks of those who believe in the somatic origin of insanity; and further, I believe that the only successful method of arriving at a definite knowledge of the pathology of insanity is to be found in a study of the minute anatomy of the brain in conditions of disease. We must appeal to the microscope for an explanation of those mysterious phenomena, which, under the name of insanity, have so long baffled the philosopher, theologian and physician. The mysteries will yield to a careful study of microscopic pathology."

NOTES ON AN EPIDEMIC OF DIPHTHERIA IN LEWISBURG, PA., IN 1880.

BY GEORGE G. GROFF, M.D.,
Member of the State Board of Health.

The prevalence of this disease, the great fatality accompanying it, and the belief that its ravages can be greatly curtailed, is the reason for the preparation of this sketch, which will be mainly confined to the sanitary aspects of the epidemic.

1. *Situation and surroundings.*—Lewisburg is situated on the right bank of the Susquehanna River, at the mouth of Buffalo Creek, thirty miles below Williamsport and sixty miles north of Harrisburg. The town is one hundred years old. The soil on which the town stands is generally a river gravel, underlaid at ten to twenty feet with a stiff clay, which is impervious to water, so that damp and wet cellars prevail. The town plot is quite level, not in any place rising more than thirty to fifty feet above the level of the river. The town drainage is natural, that is, on the surface. The river at the town is one thousand feet wide. It is not at all stagnant, though crossed by a dam at this point. The depth averages probably from ten to fifteen feet. The prevailing winds blow down the valley of the Buffalo Creek, and directly across the town and river, so that but little of the river atmosphere reaches the town. In the spring and autumn there are heavy fogs along the river, which settle over the town also. The town is comparatively free from malaria. In 1880, a mill race, since abandoned, meandered through the town, in the lower part of which there was much mud and stagnant water, and from which unwholesome vapors arose. This was generally believed to be unwholesome by the people. Human excreta was deposited in unwalled privies, which, owing to the clay bed under the town, were generally half or two-thirds full of foul-smelling water. These privies were generally not cleaned when full, but moved to a new place and the old hole covered with boards or filled with earth. The water supply for domestic purposes was from wells, and often very impure, as shown by chemical analysis.

The cemetery is located near and above the town, and so that the prevailing winds blow from it over the town.

PREVIOUS HISTORY.

The general health of the town has always been good. Malaria is probably the most prevalent disease. Typhoid fever is almost unknown. An epidemic of diphtheria visited Lewisburg sixteen years previous to 1880, but it died out and for a number of years diphtheria was almost unknown in the place. The first case in the epidemic of 1880 occurred in August, in a new house in the country near the town. The house had been occupied but a few months. The disease did not spread. The patient was not known to have been exposed to the disease. About the same time, at Winfield, three miles below Lewisburg, occurred three cases in a house in a row of tenements. From this house the disease did not spread, although children were abundant and all the surroundings most favorable for its propagation. There was no known exposure in these cases either. Near the close of August the first case appeared in Lewisburg. The patient died, and the disease slowly at first, more rapidly later, spread until it had attacked nearly all the children in the town. For this patient no exposure to diphtheria was ever discovered.

There is nothing to note here in reference to the disease itself, the majority of the cases being typical cases of diphtheria. In the cases which recovered there were no permanent sequelæ nor complications, though there was in some a temporary paralysis of the muscles of deglutition. The patients nearly always required a long time to recover. Some cases seemed to be complicated with scarlatina, and at times it was difficult to distinguish between these diseases. An epidemic of measles followed the diphtheria in the Spring. At first children were the only persons attacked, but toward the close of the epidemic, numerous adults contracted it. Nursing babes were exempt. Second attacks occurred, but were lighter than the first attacks. Adults had the disease in a light form, but took a long time to recover their usual strength. The approach of cold weather was marked by an increase in the number of cases, and these were of greater violence than in warmer weather. This was doutbless due to the indoor confinement of the children, and the lack of ventilation.

RAVAGES OF THE DISEASE.

The population of the town was	3,080
Number of cases to Dec. 5th....	399
Fatal cases....................	30
Per cent. fatal................	.07½
Per cent. of population attacked to December 5th............	.013

After December 5th, the disease continued to spread, until nearly all the children and many adults had it. But the death rate did not go above eight per cent. of those attacked.

An examination of the localities affected will show that to December 5th the disease existed in certain centres in the town. From these centres the disease spread until it covered the whole town. In almost all cases these centres were located where the population is most dense. There can be no doubt now that the disease all originated from the one case in August. By visitation and attending funerals, and from children playing together, centre after centre was set up. The contagious nature of the disease was abundantly proven during this epidemic. In almost every case where it entered a family of children, and the sick person was not promptly isolated, it passed through the whole family; but where isolation was practiced its course was restricted, in some cases, to the one person first attacked. In the college and seminary were about two hundred students, generally under twenty years of age, and yet all except one escaped the disease.

The great mistakes made here were that the contagiousness of the disease was not at once recognized and insisted upon. On the contrary, the public and sabbath schools were all kept open. Funerals were public, with the bodies exposed to the public gaze, and were in some cases even kissed by other children. This was all wrong, and is a striking illustration of the need of a more general diffusion of modern views of sanitation. The physicians of the town agreed at the close of the epidemic that they knew of *no specific* remedy for diphtheria, that local treatment was generally valueless, or nearly so. Tracheotomy was not performed in any case. Whisky was used in large quantities, but patients without it did as well generally as with it. Homœopathic treatment was not more successful than other treatment. Quinia, beef tea, milk and tonics generally, with iron, chloride and chlorate of potassium gave the best results; but under all treatment from seven to eight per cent. of the cases died.

PRINTING WITH REFERENCE TO EYESIGHT.

Several of the French railway companies and other public bodies, have resolved on having their printing done on green instead of white paper. The reason for the alteration is that they believe the combination of white paper with black characters endangers the eyesight of their work-people. Black on green has always been recognized as a good combination, and many railway tickets are so printed.

Special Reports.

REPORT ON A SAMPLE OF DRINKING WATER.

Editor Annals of Hygiene:

Upon recommendation of Dr. W. W. Webb, of this place, I send you to-day by express one quart of water from a driven well at my home. The water seems to act as a cathartic. Since the early part of this winter, after some quite dry weather, every member of my family has had spells of diarrhœa, and some have been troubled with it most of the time. A daughter of mine, while from home a week, was wholly free from it, but was taken again badly soon after her return. After having it about three weeks myself, I took a camphor powder of some kind and found permanent relief until yesterday. Yesterday noon I took a drink of the water and very soon felt the cramps and diarrhœa coming on. Severe cramps and dizziness attend the diarrhœa, and my two daughters, aged 10 and 21, find only temporary relief from remedies for the disease. We have used the water all the time to cook with, and have used it to drink occasionally as we have needed to drink. We have lived at the house one year, but found no ill effects from the water until this winter. Only one family had occupied the house and used the water before us. Of that family, a young married couple, the husband died of typhoid fever after a short residence (a few months) in the house. Now, we do not know that there is anything wrong with the water, but after giving the matter of our sickness a very careful consideration of all the causes liable to occasion it, I am led to seriously fear the water is wrong. Yours truly,

Wellsboro, Pa. James A. Boyce.

Dr. J. F. Edwards,
Annals of Hygiene :

Dear Sir—In answer to yours I enclose below a report of my examination of the water.

The water is limpid, without odor, and gives reaction for only traces of iron; no sulphides, and only traces of nitrites.

The total solids contained in it (at 102 c.) were in 1000 c. c. (1 litre), 0.292.

It shows almost no hardness. Contains chlorides in 1000 c. c., 0.008.

The organic matter expressed in oxalic acid by Kubel's method, gives per 1000 c. c., 0.170.

As already stated, these amounts were computed for the litre. As the quantity of organic matter in potable water should not exceed about 50 milligrammes per litre, it will be seen that this water contains three times this amount and over. As the well furnishing it is said to be a driven one, it is obvious that it is contaminated with surface water, and the symptoms complained of as arising from its use might well be occasioned by the organic material contained in it, especially if this contains morbific micro-organisms.

It would be of interest in such cases to have a physiological test made and make further experiments with cultures from it.

If no other water should be obtainable in the neighborhood, I would recommend that all water used for drinking purposes should be boiled before using.

L. Wolff, M. D.,
Demonstrator of Chemistry,
Jefferson Medical College.

A Sanitary Convention, under the auspices of the State Board of Health, will be held at Lewisburg, May 17th and 18th next. Governor Beaver will be present.

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Editorial.

THE HYGIENE OF LENT.

The season being now upon us when, by the faithful, a season of fasting is practiced, a word on the hygiene of fasting may not be out of order. The origin of the fasting of Lent, as of many other religious customs, was, doubtless, based on sanitary principles, and its origin in warm countries, where the season of Lent usually comes just as we are emerging from winter into the warm weather of spring, after we have gorged ourselves with heavy food, is of undoubted hygienic value. But, in our colder climes, it is a great question whether the rigid observance of Lent is not really injurious to health. The true practice of fasting means an almost total abstinence from food from say six o'clock one day until noon of the next, and a consequent engorgement (on such days as Sundays) when the fast is intermitted. We do not counsel insubordination to ecclesiastical discipline; but, since we doubt the hygienic propriety of fasting (there can be no valid objection raised to the abstinence from meat), we would suggest that, at least, those who are not robust should seek the proper authority and secure a dispensation from this fast.

Notes and Comments.

IS DIPHTHERIA CONTAGIOUS?

Issued by the State Board of Health of Maine.

This circular is published for the purpose of correcting a misapprehension which, to some extent, exists in the public mind regarding the question of the contagiousness of diphtheria. Unfortunately every year there are found persons or communities which are not yet quite sure that diphtheria is infectious, and, like the person who proves whether the pistol is loaded or not by aiming it at his own or somebody's else head and pulling the trigger, these doubting persons often infect themselves, their families, or their neighbors and keep up and provide sources of infection, which insure the non-extinction of the disease.

The direct communication of the disease is shown in the following instances:

A young lady came home sick with diphtheria in a mild form, and on her arrival her brothers and sisters embraced her. They were all attacked with a malignant type of diphtheria, and one died. The young lady visited her aunt in another family where there were four children, who took the disease and one died. No other cases in the vicinity.

At the death of a child from diphtheria two women helped in laying it out. One of them, who was fifty-three years of age, was attacked in a few days and died in three more. The other took the disease in a light form and recovered.

A boy who had had diphtheria in Boston came to this State to visit some relatives. In a few days after his arrival his aunt washed some of his clothing and was taken with diphtheria the next week, and it went through the family, four cases. Before the aunt was taken sick the boy went to another place and played with another boy, who took the diphtheria and gave it to two other persons in that family.

An only child was taken sick with diphtheria and died on the fourth day. The young mother in her grief kissed the child and took the disease. Within a week she was buried beside the child.

In 1881 there had been no diphtheria in my neighborhood for nearly four years. The school teacher during the summer vacation went to the city, a notorious hot bed of diphtheria. While there he contracted what he called a slight sore throat. He returned with this still upon him and opened school. In less than a week there were six lying sick with diphtheria and the school was closed. As the children spread the disease in their several families, it resulted in five deaths, three of which were adults.

In the following cases the infection was communicated indirectly through the medium of clothing or otherwise:

Three children in one family died of diphtheria in the croupous form. The nurse believed it was not possible to carry the disease in clothing and said she would not change her dress upon leaving the house, and that she was not afraid to take her children in her lap upon going home. She was admonished against such a foolhardy course. She told the neighbors a week after returning home that she did not change her clothing after coming from the infected house, "And," said she, "my children have not got the disease." Ten days after she left the infected house the physician was called and found her family with diphtheria of the most fatal form. One child died in thirty-six hours after it was attacked. These were the only cases that occurred anywhere in the neighborhood of the nurse's home. "It is needless to remark, that nurse now believes it is very contagious."

A lady went from Maine to help care for a family sick with diphtheria. Two of the patients died and one recovered. Three weeks after the recovery of the last patient, and after disinfection of the house and the surviving persons, the lady returned to her home in a section of this State where diphtheria had not been known for a long time. Five days after her return her only daughter, a girl of thirteen, took the disease and died.

A woman died of diphtheria in Lynn, Mass. Her son brought her clothes and bedding home, his wife washed them, took the disease, and died in less than a week.

The cases like these, which unmistakably show the contagious nature of diphtheria, are innumerable, and at the same time there are innumerable instances in which diphtheria has not been communicated to others, though others have been exposed to it. What does this prove? Not by any means that the disease is not contagious, but, as in scarlet fever, small-pox, cholera and the plagues, that all persons are not at all times, susceptible to the infection. Another thing which makes the infection of diphtheria doubly dangerous is its persistent vitality. Many cases like the following show that unless care in disinfecting and otherwise be taken, the infection will survive to start mysteriously another epidemic at some future time—months or perhaps years afterwards.

A boy whose home was in Perry visited a family in Eastport where there were cases of diphtheria. He took the disease in a light form and recovered. Upon his return his sister, aged sixteen, took the disease and died in three days. Six months afterwards another sister came from Massachusetts and occupied the room which had been the sick room. She took the diphtheria and died after five weeks' sickness.

A little girl nine years of age was found by the physician to have diphtheria in a malignant form and she died two days afterwards. The sanitary condition of the place seemed very good, and no other cases of diphtheria were in the neighborhood. It was ascertained that the grandfather, of whom the child was very fond and in whose lap she would sit much of the time, had come from a neighboring town to spend a few weeks with them—that in his family eight months previously there had been several cases of diphtheria, one fatal. The children had been sick in a room adjacent to which was a clothes-press where the old gentleman's clothes had hung. He had had no occasion to use them until the present visit to his daughter's. That clothes-press had not been disinfected.

THE USE OF WATER AT MEALS.

The College and Clinical Record says: Opinions differ as to the effect of the free ingestion of water at meal times, but the view most generally received is probably that it dilutes the gastric juice and so retards digestion. (*British Med. Journal*, Dec. 3d, 1887.) Apart from the fact that a moderate delay in the process is by no means a disadvantage, as Sir William Roberts has shown in his explanation of the popularity of tea and coffee, it is more than doubtful whether any such effect is in reality produced. When ingested during meals, water may do good by washing out the digested food and by exposing the undigested part more thoroughly to the action of the digestive ferments. Pepsin is a catalyptic body, and a given quantity will work almost indefinitely, provided the peptones are removed as they are formed. The good effects of water, drank freely before meals, has, however, another beneficial result—it washes away the mucus which is secreted by the mucous membrane during the intervals of repose, and favors peristalsis of the whole alimentary tract. The membrane thus cleansed is in much better condition to receive food and convert it into soluble compounds.

The accumulation of mucus is specially well marked in the morning, when the gastric walls are covered with a thick, tenacious layer. Food entering the stomach at this time will become covered with this tenacious coating, which for a time protects it from the action of the gastric ferments, and so retards digestion. The tubular contracted stomach, with its puckered mucous lining and viscid contents—a normal condition in the morning before breakfast—is not suitable to receive food. Exercise before partaking of a meal stimulates the circulation of the blood and facilitates the flow of blood through the vessels. A glass of water washes out the mucus, partly distends the stomach, wakes up peristalsis, and prepares the alimentary canal for the morning meal. Observation has shown that non-irritating liquids pass directly through the "tubular" stomach, and even if food be present they only mix with it to a slight extent. According to Dr. Leuf, who has made this subject a special study, cold water should be given to persons who have sufficient vitality to react, and hot water to the others. In chronic gastric catarrh it is extremely beneficial to drink warm or hot water before meals, and salt is said in most cases to add to the good effect produced.

SPRING—DANGEROUS SPRING.

The *Monthly Bulletin of the Iowa State Board of Health* very truly says: "Spring is coming. The disappearance of the snow and the return of the pioneer songster of spring (if the pestiferous English sparrow don't prevent) are always in our northern latitudes looked forward to with fond anticipation. And yet no season of the year is fraught with so many perils to life and health. The sudden changes in the weather; the slush and water leading to wet and cold feet; the raw, east winds; the early hot days, illuring to the premature laying aside of wraps and underwear; all conduce to an unusual number of cases of pneumonia and rheumatism, and to a frightful mortality. If there is any time in the year when gossamers and overshoes and suitable underwear are needed and indispensable in Iowa (and Pennsylvania as well) it is in February and March. As the warmer days come the system becomes more relaxed, more susceptible to disease, and more sensitive to atmospheric changes.

The most extensive epidemics of typhoid fever known in this country have occurred in the spring. A sporadic case occurs here and there, perhaps far remote. The stools have not been properly, if at all, disinfected. They are, as in the noted Plymouth, Pa., epidemic, which occurred three or four years ago, thrown out upon the frozen ground and snow. In the light spring days the disease germs, which have braved the rigors of the winter, are, with the genial rays of the sun and the spring showers, thawed out and carried into the water courses, conveying pestilence and death with them. Thus spring, with its balmy breezes and its singing birds, instead of being a harbinger of joy, as designed by the wise Architect of the Universe, may carry in her bosom a poison as deadly as the asp, and with the 'spring beauties' the 'weeds of mourning.'"

THE DOCTOR'S PROTECTION FROM SMALL-POX.

Several physicians have asked us (says the *Monthly Bulletin of the Iowa State Board of Health*) what are the best means of protecting themselves, their person and clothing, when they are called upon to attend cases of small-pox, so that without risk of carrying the disease and infecting others they may continue their general practice.

The following plan we believe to be perfectly safe: There should be worn a loose gown of glazed muslin long enough to cover the feet, buttoning closely at the neck and wrists, and having a waist-band; the head—all the hair, if possible—covered by a cap of like material. This should be put on out of doors and taken off on returning from the house. After removing the cap and gown, the hands, face and all the exposed parts of the body should be washed well in soap and water and then rubbed freely with a weak solution of corrosive sublimate, the best germicide known. Physicians should not be expected to make unnecessary visits, as usually, with good nursing and care, but little medicine will be required. Wearing apparel, such as coat, vest and pants, that cannot well be washed or boiled, can be thoroughly disinfected by steam, hot air (212 degrees F.), or by sprinkling them and pressing them slowly and thoroughly with a flat-iron as hot as can be used without burning the goods. But little confidence can be put in sulphur fumigations.

NEVER MAKE FUN OF NERVOUS CHILDREN.

A word about nervous children. Never scold them, nor "make fun" of them (says the *Boston Globe*). They suffer enough without your threats or sarcasm. Pretend not to see their awkwardness when in company, nor their grimaces when alone. A case was reported, the other day, of a boy of ten years who, on being vexed, and often without any apparent provocation, will clench his hands and make the most frightful contortions of the muscles of his face and head till his poor mother fears he is idiotic. By no means. He is the brightest boy in his class at school, fond of reading and of natural history; but he is of a highly nervous temperament, and has not been taught to control the little wires, so to speak, on which he is strung. This is no single case. There are thousands of children who give way to their nerves in similar fashion. Talk to them about these curious little fellows that should be their servants, not their masters. Never whip them. The man or woman who whips a nervous child is on a level with brutes that have no reason. Encourage them. Help them. Be patient with them. They are the making of our future successful men and women, for they will work hard at whatever they undertake. Brace up your own nerves first, and then be indulgent towards the capers of your over-nervous children.

ANIMAL AND VEGETABLE DIETS COMPARED.

From the *Lancet* we learn that Dr. Baftalovski, having secured the intelligent co-operation of four medical friends, proceeded to diet them and examine their secretions, in order to obtain information as to the different effects produced by various classes of food on the human organism. With purely animal diet the mean assimilation was ninety-five per cent., and the nitrogenous metabolism 108.6 per cent., the extractive matters in the urine being more than when the diet was exclusively vegetable. With vegetable diet the assimilation was 42.5 per cent., the nitrogenous metabolism much less than with animal food, and the extractive matter four times as great as with a mixed diet. With a mixed animal and vegetable diet the assimilation was nearly as high as with the exclusively animal food, being 92.4 per cent.; but the metabolism was considerably less than with animal, but more than with vegetable food.

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EFFECT OF SEWERAGE ON FISH.

Some investigations made by German chemists (*College and Clinical Record*) in regard to the injury to fish by sewerage and waste waters, show that chloride of lime, in proportion of 0.04 to 0.005 per cent. has an immediate deadly action upon tench, while trout and salmon perish in presence of 0.0008 per cent. of chlorine. Sulphurous acid has the same action as chlorine, and is still more hurtful if another acid is simultaneously present; sulphites are harmless. Hydrochloric acid, 1 per cent., kills tench and trout. In sulphuric acid of 0.1 per cent., trout turned on their sides in two to six hours, while tench were not affected in eighteen hours. Tannin at 0.1 per cent. is harmless; ammonia exerts no action at 0.01 per cent. Soda at 1 per cent. is fatal to trout on long exposure. Manganese chloride at 5 per cent. had no action on tench in twenty-four hours, and a trout sustained 1 per cent. for five hours. Iron acts as a specific poison upon fish, but only in the state of ferrous salt. Alum has the same injurious action as the salts of iron; and the solution of caustic lime has an exceedingly violent action upon fish.

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A POSSIBLE CAUSE OF LEFT-HANDEDNESS.

Dr. Feltz relates the following in *L'Art Médical* of October 2, 1887: In a family composed of five persons, the father and mother were right-handed, as was also the eldest son, who was always cared for in his infancy by a nurse. The second child had been nursed by the mother and was left-handed. The third child, also nursed by his mother, was, at the age of one year, evidently left-handed, never grasping any object with his right hand. Dr. Feltz noticed that the mother carried the child on her left arm, and she said, in reply to his questioning, that it had always been her custom to carry her children on this arm. The writer advised her to hold the infant on her right arm. She did so; the baby soon began to use his right hand in seizing objects, and is now, at the age of ten years, normal as regards the preference of the right over the left hand. When the nurse carries the child on her left arm, Dr. Feltz remarks, the left arm of the infant is the one which is free, and which consequently he learns to use to the neglect of the right.

◆

GETTING RID OF THE CORSET.

Mrs. Parker of the Cook County (Illinois) Normal College has adopted a practical method of inducing her pupils to divest themselves of the corset. She described her method thus, at a meeting of the Woman's Club:

"I begin the subject of dress orally. That is to say, with the use of statuettes, prints and art models. I keep the ideal constantly before my girls, just as the object for a drawing lesson is held before the class. More than that, I show them in an unobtrusive way that I myself am an apostle and make my habits conform to the ideal.

"It takes me just two weeks to get the corsets off the girls. At first there is a radical aversion. Eyes snap defiantly, and protest is shown by the diligent assumption of correct attitudes, but I soon convince them in the course of physical exercise that the body compressed and distorted by the garb of fashion cannot fulfill the requirements of health and duty."

DIETARY IN SKIN DISEASES.

The Blackfriars Hospital for Diseases of the Skin (London) has the following rules printed upon a small strip of stiff paper, and a copy is given to each of the many daily applicants to that great charity:

Breakfast—Bread and milk, rice, milk or porridge, instead of much tea; coffee or cocoa, with or without eggs; and bread and butter, or a little animal food.

Dinner—Plain roast or boiled fresh meats, fish or poultry, plainly cooked; egg or farinaceous puddings, potatoes, and few other vegetables, plain boiled rice.

Supper—Milk and water, or gruel, or other farinaceous food, with bread and butter, a little cream cheese or poached eggs.

Beverages—Barley water, toast and water, thin gruel, beef tea, soda, potash or seltzer waters.

N. B.—*To be Avoided*—Salt meats, soups, sweets, acids, fruits, pastry, and raw vegetables.

No malt liquors, wine or spirits are to be taken without the sanction of the medical officers.

PRAYER AND SMALL-POX.

One of the most sensible utterances on prayer that I have seen for some time is that of the Rev. Dr. Dallinger, of Sheffield, (says Labouchere,) who is an eminent man of science as well as a divine. The Archbishop of York has issued a prayer asking God "to remove this great trial which Thou has sent us"—i. e., the small-pox epidemic. On this Dr. Dallinger says: I will yield to no man in reverence for true prayer; but I will tell you without flinching that I cannot, and I will not, pray for the removal of the small-pox scourge. It would be a mockery of God. Let us do our best, and then in baffled agony cry to God for help. But here we have not helped ourselves, and how dare we ask the Almighty to help us? Let us do our duty, act up to our knowledge, and as surely as the small-pox curse came among us by physical laws broken, so it will depart from us if we see to it that physical laws are obeyed.

DENTAL CARIES IN CLARIONET-PLAYERS.

In the *Vratch*, Nos. 30 and 31, 1887, Dr. P. Reformatsky, of Ekaterinoslav, publishes a valuable contribution to the study of professional diseases of the teeth. The author, who is surgeon to the Simferopolsky Infantry Regiment, has examined the teeth in bandsmen of his own and four other regiments. He found dental caries in about fifty per cent. of the men, but he was especially struck with the great frequency of a characteristic caries of the upper central incisors which was present in fifteen or twenty of the clarionet-players belonging to two regiments. In playing, the mouthpiece of the instrument is pressed against the outer surface of the lower lip, which then forms a kind of soft protecting cover for the lower teeth, while the upper aspect of the mouthpiece is kept in direct contact with the upper incisors.

A CENTENARIAN.

Mrs. Dorothy Bender, who resides with her daughter at No. 123 North Sixteenth street, in this city, recently celebrated her one hundredth birthday. Mrs. Bender retains most of her faculties. Of Philadelphia in the early part of this century and the closing part of the last she has very vivid recollections. She was married early in life, and the tranquility of her life has only been broken by commonplace events, with one exception, when her husband enlisted in the war of 1812. Not long ago five generations met in her room. She has had five children and some half a dozen great grandchildren; five weeks ago her oldest daughter, aged 80, died. Mrs. Bender was born in this city near Second and Callowhill streets, and comes of a family that has included many long-lived persons.

THE BED-CURE.

At the risk of being accused of favoring laziness, we must strongly recommend an occasional *day in bed*. We can heartily endorse the remarks of *The Press* on this subject: "What with colleges, universities and newspapers, with political campaigns and tariff debates, with reform in politics and constant changes in social customs, with social clubs and clubs political, with art culture and the decorative mania, we are cultivating every side of man's nature but his physical side. We believe in the bed-cure; it is better than the hot water cure, or grape cure, or gymnastics and other exercise. It is rest we need, and we hail the bed-cure as the greatest discovery of the Nineteenth Century." Perhaps if more people believed in the bed-cure and took it in time there would be less heard about "nervous prostration."

EPIDEMIC INSURANCE MOVEMENT.

From the London *Lancet* we learn that an excellent system of insurance against the small-pox prevalent in Sheffield has been set on foot by workmen in more than one factory. It having come to their knowledge that some of their fellow-workmen continued their attendance at the factory, although they came from infected houses, they called a meeting at which it was decided that pending the period of danger a levy should be made, amounting to 2½ per cent. of each man's average earnings, so as to provide a fund out of which any man coming from a house where there was small-pox could be paid his average weekly wages, until it was certified that there was no further risk of infection.

Such an example is well worthy of imitation in our own country, not only in reference to small-pox, but to all contagious diseases.

WE THINK IT A SUBJECT FOR EXTERMINATION.

The *Monthly Bulletin* of the Iowa State Board of Health says: "The voluntary effort of the State Board to educate the people in sanitary matters, by sending gratis the *Bulletin* to local boards and health officers, received evidence recently of the appreciation thereof from a local board in Boone county, who refused to receive it on the ground that "we have all the reading matter we want." We are unable to decide whether that board is a subject for commiseration or congratulation. "Such a Board is infinitely worse than none at all, and reminds us of the doctor in this State who recently told our agent that he "wanted no journal *because he knew all about hygiene;*" happy man! we really envy him.

DISINFECTANT FOR STREETS.

It is painfully and unpleasantly evident to every one, that when the streets of a city are torn up for the purpose of laying water or gas pipes, and the like, the most noxious and unhealthful gases are thereby liberated and wafted into the surrounding atmosphere. To remedy this evil, Dr. John C. Peters suggests that a solution of bromine, one pound to 250 gallons of water, should be freely sprinkled wherever these excavations are in progress. He mentions an interesting fact that cobblers, saddlers, apothecaries, and others whose occupations surrounded them with a strong odor suffered less from the nausea and prostration caused by the gas than dry goods men and others whose surroundings were comparatively scentless.

A NEW MILITARY RATION.

From the *College and Clinical Record* we learn that all the garrisons within the limit of the Seventh Army Corps (Lower Rhine and Westphalia) have now been provided with larger samples of the new article of food which is in future to form the so-called "iron ration" of the men in the field. It is a peculiar kind of bread, in the shape of small cubes, the size of a chocolate drop, made of fine wheat bread, strongly spiced, and calculated to keep for a long time. When taken into the mouth it quickly softens, and is both palatable and nutritious. It is chiefly intended for forced marches, when there is no time for camping and cooking.

NON-IRRITANT IODINE.

Syrup Hydriodic Acid is rapidly becoming a popular means of administering iodine, possessing as it does many advantages over iodide of potash, its non-irritant action coupled with its pleasing taste is probably all that could be asked of a preparation of iodine. As ordinarily prepared its use in many cases has been unsatisfactory on account of the decomposition of the product, but this has been overcome by the enterprising firm of W. H. Hostelley & Co., of this City. They claim to have a perfectly stable preparation and we believe their claim to be a just one.

A HEALTH OFFICER FOR NEW YORK.

According to the *Medical Record*, Governor Hill, in his annual message, recommends the abolition of the State Board of Charities and the concentration of its powers in a single officer, and the abolition of the State Board of Health and the vesting of its powers in one official. The object involved in these two measures is the concentration of official power and responsibility in some one responsible head, by which the efficiency, usefulness and economy of the public service will be increased.

Model Ordinances of the State Board of Health.

COMMONWEALTH OF PENNSYLVANIA.

State Board of Health and Vital Statistics.

MODEL FORM FOR RETURN OF A STILL-BIRTH.

N. B.—No Fœtus should be interred, or disposed of in any manner, without a Permit therefore having been obtained from the proper authorities, such permit to be granted upon the presentation of a proper return.

Return of a Still-Birth. No.

The death of an infant that has breathed must not be returned as a STILL-BIRTH; such deaths should be certified in the usual manner, after returning the Birth-Record.

(Name of City. Borough, Village or Township and County.)

Name of Mother,..
Name of Father,..
Residence of Mother,..
Period of Utero-gestation,..
Date of this Birth,..
Sex,....................*Color,*....................
Nativity of Mother,....................*of Father,*....................
Cause of Dead-Birth, (if known,)..
Signature of Medical Attendant,..
Residence " " ....
Name of other person making this return,..
Residence " " " ....
Date,..........................*188*
Undertaker,..
Place of Burial,..

COMMONWEALTH OF PENNSYLVANIA.

State Board of Health and Vital Statistics.

Model Form for a Report of Communicable Disease.

REPORT OF COMMUNICABLE DISEASE

OF ONE OR MORE CASES, IN ONE FAMILY,

When possible should be made by a physician.

This Report must be made, within twenty-four hours, to the Local Health Authorities of the Township, Village, Borough or City in which the sick person is.

EXTRACT FROM MODEL ORDINANCE.

SECTION 32. Whenever any householder knows that any person within his family or household has a communicable disease, dangerous to the public health, he shall immediately report the same to the Board of Health (or Borough Council,) giving the street and number or location of the house.

SECTION 33. Whenever any physician finds that any person whom he is called upon to visit has a communicable disease, dangerous to the public health, he or she shall immediately report the same to the Board of Health (or Borough Council,) giving the street and number or location of the house.

Disease and date of first symptoms,..
Name and residence of Patient,....................*Sex,*..........*Age,*..........
Origin of first outbreak,..
No. of persons in family,........*; Male,*........*ages,*........*; Female,*......*ages,*..........
Others exposed? Who and where?..
Name and address of attending Physician,..
Name and address of person making this return,..

DISINTERMENT PERMIT.

....18

PERMIT for Removing the bod....of

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$...............

Received by...

COMMONWEALTH OF PENNSYLVANIA.

STATE BOARD OF HEALTH AND VITAL STATISTICS.

Model Form for Permit for Disinterment of a Dead Body.

DISINTERMENT PERMIT.

Health Office,————————18

Permission is hereby granted to remove the bod——of

....

from..

....

to..

By a Regulation of the State Board of Health it is required that all DISINTERMENTS shall be done during the day; and the Superintendents of Burial Grounds are prohibited from allowing any dead body to be removed from or interred in their respective grounds between sunset and sunrise.

By order of the

....

COMMONWEALTH OF PENNSYLVANIA—STATE BOARD OF HEALTH AND VITAL STATISTICS.

MODEL FORM FOR RETURN OF BIRTHS.

RETURN OF BIRTHS in the............................of..................................under my care for the MONTH of..................................18........

THIS SHEET IS FOR ONE MONTH ONLY. Made to the Health Officer in conformity with the..................................

DATE OF BIRTH.	NAME OF CHILD.	SEX.		COLOR.		Ward.	PLACE OF BIRTH.	NAMES AND BIRTH PLACES OF PARENTS.	OCCUPATION OF FATHER.
		Male.	Female.	White.	Black.		Number and Street.		

I certify that the above Return is correct, according to the best of my knowledge and belief.

....M. D.

Residence.. ....

—— COPY ——

OF

Certificate of Death.

(TO BE RETAINED BY PHYSICIAN.)

Date of Death..............

Name of Deceased...........

Sex: Male or Female.........

Age....................

Color....................

Married, Single, Widow, Widower....................

Occupation.................

Birthplace..................

Duration of Residence........

Nativity of Father...........

Nativity of Mother...........

Place of Death..... ....

Cause of Death:
First, (Predisposing,).....
Second, (Immediate,).....

Duration of Last Sickness.....

REMARKS:

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COMMONWEALTH OF PENNSYLVANIA.

State Board of Health and Vital Statistics.

MODEL FORM OF A RETURN OF A DEATH.

No....................

The Special Attention of Physicians is respectfully invited to the Remarks below, and to the List of Diseases on the back of the Certificate.

Certificate of Death.

To the Health Officer of...............

Permit No...............

Date of Death......................18 .

Full Name of Deceased................................

Sex..

Age..........*Years* ....*Months*...........*Days.*

Color..

Married, Single, Widow, or Widower.
[Cross out the words not required in this line.]

Occupation....................................

Birthplace....................................

Duration of Residence in..............................

Nativity of Father...........*Nativity of Mother*...........

When a Minor,
Name of Father..........................
Name of Mother..........................

Place of Death [Give Street and No.]...................

Cause of Death:
First, (Predisposing,)............................
Second, (Immediate,)............................

Duration of Last Sickness............................

All the above information should be furnished by the Physician.
In case of death by communicable disease, please state what, if any, local cause exists to produce the same.

Place of Burial.............	
Date of Burial.............	....
Undertaker................	
Place of Business..........	*Address*................

EXTRACT FROM MODEL ORDINANCE.

SECTION 47.—Every undertaker or other person who may have charge of the funeral of any dead person, shall procure a properly filled out certificate of the death and its probable cause, in accordance with the form prescribed by the State Board of Health, and shall present the same to the designated officer or member of the Board of Health, and obtain a burial or transit permit thereupon, at least twenty-four hours before the time appointed for such funeral; and he shall not remove any dead body until such burial or transit permit shall have been procured.

NOTE.—In any City or Borough the appropriate regulation of the same or of the local Board of Health can here be substituted.

The following additional information is requested in relation to the Causes of Death enumerated below:

*ANEURISM—Mode of Death.

CER. SPIN. MENINGITIS—Variety, whether epidemic or simply inflammatory.

CHILDBIRTH—Circumstances producing Death.

*CANCER—Variety and seat.

CALCULUS—Mode of Death.

DENTITION—Mode of Death.

DISEASE OF HEART—Variety. Valves involved.

DROPSY—Variety and Cause, and Serous Sac involved.

ENTERITIS AND GASTRO-ENTERITIS —Cause. Whether Diarrhœal or not.

ERYSIPELAS—Seat and Cause.

FRACTURES—Cause and Mode of Death.

GANGRENE—Seat and Cause.

GASTRITIS—Cause.

*HERNIA—Variety and Mode of Death.

INSANITY—Variety and Mode of Death.

JAUNDICE—Cause and Mode of Death.

MANIA, ACUTE—Cause and Mode of Death.

MISCARRIAGE—Cause and Mode of Death.

MALIGNANT PUSTULE—Location and Cause.

MALFORMATION—Variety.

METRITIS—Variety and Cause.

NECROSIS—Seat. Cause and Mode of Death.

*OVARIAN TUMOR—Mode of Death.

PARALYSIS—Variety and Cause.

PERITONITIS—Cause.

PHLEBITIS—Cause.

PYÆMIA—Cause. Nature of injury, if any.

PREMATURE BIRTH—Cause. Fœtal age.

PRETERNATURAL BIRTH—Manner of.

SYPHILIS—Variety, Chief Location, and Mode of Death.

TETANUS—Nature of injury, if any.

ULCER—Nature, Chief Location, and Mode of Death.

VIOLENCE—Cause, Variety, Seat, and Mode of Death.

ABSCESS—Cause, Location, and Mode of Death.

Specify every Surgical Operation with fatal result.
Mention INTEMPERANCE whenever recognized as having produced or complicated the direct cause of Death.
In diseases marked * state if operation has been performed.
In cases of Death resulting from Violence, state whether Accidental, Homicidal, Suicidal, or in pursuance of Legal Judgment.

REMARKS:

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The Annals of Hygiene.

Vol. 3. PHILADELPHIA, APRIL 1, 1888. No. 4.

Communications.

SCHOOL FURNITURE.[1]

BY PROF. T. W. CHITTENDEN, OF APPLETON, WIS.

Much has been said and written during recent years upon the general subject of School Hygiene, the chief stress hitherto having been laid upon matters of construction, ventilation, lighting, etc., of the school buildings, undoubtedly points of prime importance as affecting the physical welfare of all who occupy school-rooms, whether as teachers or scholars, and all points worthy of the consideration bestowed upon them. Little attention has been given as yet, however, to the construction of school furniture from a sanitary point of view, or to the grave physical effects that are often brought about by the long continued occupation of seats and desks faulty in their original design and construction, in their relation to the physical conformation of those who are obliged to use them, in their relative arrangement with respect to each other, or, it may even be, in all the particulars specified.

Few observant persons can spend a day in the school-room without remarking the great variety of constrained and awkward attitudes exhibited by the pupils therein, and the teachers are few who do not find a frequent cause of complaint and reproof in the restlessness of their charges. The physician sees cases, more or less numerous, of crooked spine, contracted chest and the like, and the oculist is often consulted for defective eyesight coming from the school-room, and a large proportion of such cases may be traced to the one cause, the same to which are due the awkward postures noted by the casual visitor, and the restlessness and uneasiness that are the bane of the teacher, namely, the faulty construction of school furniture and the lack of anything like a close correlation between its lines and those of the human body.

Long observation, including school-rooms of all grades, from the private school, where are gathered the children of parents able and desirous to secure every advantage, educational or other, for their offspring, down to the district school of a new country assembled in a log shanty in the northern woods and fitted out with furniture nailed together from green lumber by the general carpenter and builder, has shown few instances where any attention was given to the proper adjustment of the seat and desk to each other, or to the occupant, fewer still where desks and seats of varying size were to be found in the same school-room, and fewest of all where any regard was paid to adjusting the seat to any physical peculiarities of the individual scholar. Looking back over a period of nearly fifty years, the writer can recall but one school-room where a little was done in this last direction to meet certain exceptional cases; in no other instance within his recollection has the fact been recognized that children of varying height and conformation were to occupy the apartment, or has any provision been made for the accommodation of children of other than the assumed standard size and pattern. Every teacher will doubtless tell the same story.[1]

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[1] Reprinted from the Report of the Wisconsin State Board of Health.

In an instance now existing, two boys occupy one double seat and desk in a school-room, one lad, aged twelve years, being sixty-one and a half inches in height, the other, aged eleven, being fifty-seven inches: the height of the seat occupied by both is fifteen inches; that of the desk, twenty-eight inches. These boys are both considerably above the average height of boys of their ages, and they are far from representing the extreme variations in stature in the children occupying the same room. Nevertheless, all these children are obliged to make use of desks and seats of uniform height, the standard having been arbitrarily set up by no one knows whom.

The customary method of fitting up a school-room "with all the modern improvements, furniture included," is somewhat as follows: By public advertisement or private correspondence, bids are obtained from the various manufacturers the bid usually being so much for each combined seat and desk, double seat and desks—*i. e.*, those designed for the accommodation of two persons each, being generally preferred, and upon some one of the offers thus made a contract is finally concluded. The superficial area of the room having been ascertained, the next procedure is "to economize space as much as possible;" that is, to get the largest number of seats and desks into the room that it can be made to contain, and yet leave space for the absolutely necessary aisles and passages, for stoves, teacher's desk and other indispensables, among which fresh air is not often reckoned. Both the contractor and the school board consider that there are direct advantages to be secured by this course; on the one side, of course, the dealer's interests are subserved by his making the largest possible sale, and on the other "the interests of economy to the district in the long run" are urged; for by using double seats and desks, by setting them as close together as possible, thus reducing passages to the narrowest limits, and by crowding the teacher into the least practicable space, it may be that a school-room large enough to accommodate properly forty pupils, may have a hundred crowded into it. Both parties thus agreeing, the room is packed with desks and seats uniform in size and height, resplendent with varnish and bronzed iron frames, and variegated by means of ash and walnut, or maple and cherry, and the good people are called together on some convenient evening to admire the new school-room with its furniture and to listen complacently to more or less glorification of their own public spirit and enterprise, and the admirable management of the district board.

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[1] An exception to the above record has just come to the writer's knowledge. A note recently received from a teacher contains the following statement: "My room, with a commendable spirit of economy, is furnished with desks of all sorts and sizes, left over from the furnishing of other rooms. As my pupils vary in stature from *small* children of ten to those of full adult growth, I do the best I can to place them in seats somewhat proportioned to their size."

Certain practical inconveniences have unfortunately resulted from the economical arrangement above referred to. All the seats and desks are constructed on the plan now generally in use of attaching the seat to the desk behind it. The extreme difference in the height of the seats is five inches; that in the height of desks is three and a half inches; seats of fifteen inches in height are placed indiscriminately for desks of twenty-five and twenty-eight inches high, while the desks are generally too high for the seats, and in a majority of cases, both seats and desks are too high for their occupants.

But when all this is over and done with, and the school has settled down to work, as time goes on some deleterious influence is found to be abroad among the children for whose special benefit the school has been built and equiped. One is rendered frequently incapable of study by severe headaches; a second, suffers from some mysterious "girl's troubles;" and a third, is the victim of still more mysterious "growing pains;" the fourth, is suddenly discovered "to have one shoulder higher than the other," and the examination discloses lateral spinal curvature; the fifth becomes round-shouldered and stooping, and, in time, grave pulmonary disease develops itself and carries him off long before the expiration of his allotted time, or renders his life a burden through long years; sight suffers in the sixth, and he must lose time and "fall behind his grade," greatly to his own mortification and the vexation of his teacher and parents.

The people wonder at and lament the lack of strength and stamina in the rising generation, "so different from themselves when they were young, when they had no such advantages in the way of education, no such school-houses, no such teachers, no such systems, and no such furniture." Certain important elements are overlooked, however, in making the comparison, among them the fact that no such amount of labor was imposed upon the public school pupils of those earlier days, that they were under no such strain as is put upon nineteen-twentieths of the children of to-day, and that the standard of scholarship now required of the many was then looked for only from the comparatively few who were destined for a college course.

Notwithstanding the great advances made in some respects with regard to matters and modes of education, it must be admitted that comparatively little has been done as yet to secure the necessary physical foundation upon which the mental superstructure must rest. It is true that here and there a college or an endowed academy may be found, with a fine gymnasium as a part of their educational equipment, a compulsory course of physical instruction and a competent instructor to superintend the whole; but these institutions, admirable as they are in all respects, are far from meeting the existing need; worse still, it does not yet appear that there is anything like a general recognition of the fact that the need exists.

The writer has for some time been engaged in the study of the furniture used in many school-rooms with the idea of showing some of the more serious of its defects of construction and arrangement, the latter more especially, and their effects in producing permanent deformity and disease. The original design was to visit a number of the schools and photograph the seats and desks actually in use, with their occupants so disposed as to show the lack of correlation between the lines of the body and those of the seat, the physical contortions induced by faulty arrangements of seat and desk and such other evils as might be best exhibited in this way.

A very brief experience was sufficient to show the impracticability of this plan, and the method finally adopted was to visit the schools while work was going on therein, to carefully note the defects o furniture and its arrangement, to make special study of the conditions actually existent, and to reproduce those conditions at a subsequent time and in a place where they might be photographed, using, in making the reproductions, notes, sketches and measurements made on the spot. As models, several well-developed boys, of ages ranging from eight to fourteen years, were employed; seats and tables were arranged by the aid of the memoranda just mentioned, and the models, divested of clothing, were placed in circumstances similar to those observed in the school-room, and permitted, without special posing of any kind, to take the attitudes suggested or compelled by the furniture, these attitudes being, it is almost needless to say, exactly those to be seen daily in every school in the State by anyone who will but look for them.

A camera was then brought to bear upon the subject and a photograph carefully taken, the result being to show very clearly the reasons for much of the uneasiness and restlessness so often observed and commented upon in the school-room, which must exist under the circumstances, but the causes of which are wholly concealed by the every-day dress.

The fact has already been mentioned that, despite the varying stature of the children assembled in any given school-room, all the seats and desks in the room will be of a uniform height, unless some accidental circumstance has intervened to prevent, this standard size being determined by some occult process, known, if known at all, only to the maker of the seats and desks in question. Some very curious facts and figures were furnished in relation to this matter by the teachers of the State a few years ago, in reply to inquiries made by the State Board of Health. Thus in one instance it was determind to utilize the shool-room as a place of worship on Sundays, a perfectly legitimate and proper use of the room, if held subordinate to the purpose for which it was designed; but the seats and desks were all constructed with this object in view, of a size suitable for adults, the children for whom it was supposed to be furnished being left out of consideration entirely. "Out of twenty-six of my pupils," said a teacher in another locality, "fifteen cannot touch the floor with their toes when they are sitting squarely upon the benches." Said another: "None of the seats in my school-room are low enough to allow the smaller scholars to rest their feet on the floor." Those who will consult former reports of this Board will find therein recorded many other instances similar in kind, and the writer's observation has shown him that they occur with great frequency. Numerous communications from teachers comment on the same subject.

In order to study the effect produced when a child is thus seated, a stool of eighteen inches in height was obtained, that being the average height of an ordinary chair; a boy between 9 and 10 years old was undressed and placed upon it, and instructed simply to keep his feet off the rounds, the lad being thus put in the condition of the children in the school-rooms to which reference has been made. The muscles of the trunk soon became tired, and after a few efforts to sit erect the position shown in figure 1 was assumed.

The evil effects of such a posture need not be here rehearsed; any reader who will try the experiment of sitting for half an hour on a seat from which he cannot reach the floor with his feet will be fully convinced of their reality.

When the seat is furnished with a back the case is somewhat altered for the better

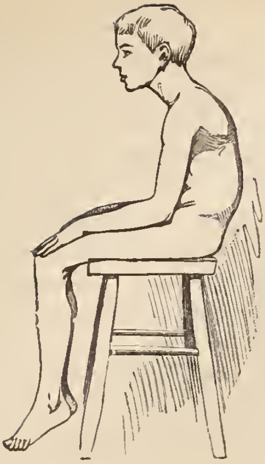

Fig. 1.

as several positions may be assumed according as one or another set of muscles becomes wearied. One of these positions is so closely analogous to that just represented that it is needless to give it here ; a second is taken when, as is usual in school seats, the chair has no rounds, and the desk has no foot rest, which latter fault of construction is too often seen, though generally avoided by the better class of school furniture manufacturers. Under these circumstances the lower part of the body is thrown forward until the feet can reach the floor, while the shoulders rest against the chair back, leaving the lower part of the spine unsupported, as shown in Fig. 2.

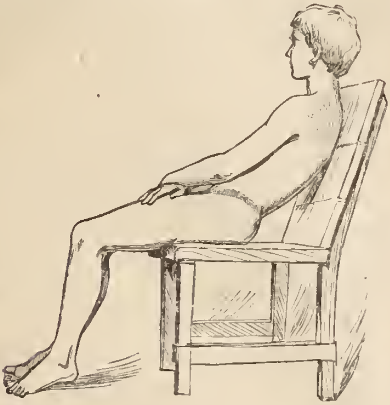

Fig. 2.

The posture is one of constraint, and is not long maintained, the child slipping back in the attitude of Fig. 1, or taking another position, one frequently to be noted, which will be given hereafter. The shifting from one of these phases of discomfort to another, when thirty or forty children are concerned, gives rise to much of the apparent restlessness of the ordinary school-room.

(TO BE CONCLUDED.)

EXPERIMENTAL STUDIES OF THE CAUSATION OF TYPHOID FEVER, WITH SPECIAL REFERENCE TO THE OUTBREAK AT IRON MOUNTAIN, MICH.[1]

BY VICTOR C. VAUGHAN, M. D., PH. D., AND FREDERICK G. NOVY, M. S.

Last October, having heard of the prevalence of a severe epidemic of typhoid fever at Iron Mountain, Michigan, we requested Dr. G. B. Johnson, a physician of that place, to forward to us a sample of the drinking water used by families in which the disease had appeared. This request was immediately complied with, and we determined to make the most thorough tests possible. The ordinary sanitary analysis, which consists in the determination of free and albuminoid ammonia, chlorine, nitrates and nitrites, we determined would be altogether inadequate. Besides, as we afterwards learned, such an analysis had already been made by the competent chemists of the Chapin mine, at Iron

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[1] This is an abstract of part of the First Quarterly Report to the State Board of Health, of work done in the Michigan State Laboratory of Hygiene, at the State University.

Mountain. The results of this analysis, together with those of other waters in the village, made by the same chemists, will be given further on.

After much deliberation, we determined to inoculate sterilized meat preparations, and sterilized milk, with the suspected water, and then to keep the material at or near the temperature of the human body, for varying periods of time, and to ascertain whether or not there would be any poisons developed by the bacteria, which were suspected of being in the water. The following are the details of the method: A number of Erlenmeyer flasks of 400 c. c. capacity were thoroughly cleansed and rinsed with distilled water; then dried in an air-bath. When dry, they were tightly closed with plugs of cotton and heated for two hours at 140–150°C.

A litre of fresh milk was placed in a large flask, plugged with cotton, and heated in a Koch's steam sterilizing apparatus for over three hours. The flask was then taken out and, while yet warm, its contents were transferred by means of a sterilized graduate and sterilized funnel, in portions of 150 c. c. each, to the above mentioned sterilized small flasks. The transfer was made as speedily as possible, and the flasks were immediately plugged with cotton and capped with pieces of filter-paper, which were held in position by means of rubber bands. The flasks, thus prepared, were placed in the steam sterilizing apparatus and heated for two hours. This was found to produce perfect sterilization.

One pound of lean beef was chopped up finely and treated with one litre of distilled water. The whole was set aside in a cool place for twenty-four hours, being occasionally well shaken. It was then filtered through cloth, the filtrate was diluted to one litre with distilled water, placed in a large beaker and heated almost to boiling. Then twenty-one grams of peptone and five grams of pure sodium chloride were added. While still hot, the solution was carefully neutralized with sodium carbonate, then placed in the steam sterilizer and heated for two and one-half hours. After removal, and when nearly cold it was filtered through paper; the filtrate was made up to one litre with distilled water, placed in a large assay flask, plugged with cotton and heated in the steam sterilizer for three hours. After cooling, it was transferred to the sterilized flasks, which were plugged with cotton and heated for two hours in the steam sterilizer.

November 9th, 3 P. M., some of these flasks were inoculated with Iron Mountain water; others with some water which we had received from Lansing, Mich., and which had been used by a family, some members of which suffered from typhoid fever; and one each of the milk and meat preparation was left without inoculation and used as controls.

Two of the meat and two of the milk flasks were inoculated with 30 c. c. each of the Iron Mountain water, and one meat and milk flask with 50 c. c. of the same water. The same number of flasks and the same amount of water were used with the Lansing water. Thus we had six flasks inoculated with the Iron Mountain water, six with the Lansing water, and two controls.

These flasks were then placed in a Koch's vegetation apparatus and kept at from 30°–38° C.

November 11th, 47½ hours after the inoculations were made, four flasks, one containing meat preparation and Iron Mountain water, the second, milk and Iron Mountain water, the third, meat preparation and Lansing water, and the fourth, milk and Lansing water, were removed from the vegetation trough and examined.

The meat preparation inoculated with Iron Mountain water had a strong, repulsive odor, showed an abundant, white bacterial growth, and was neutral in reaction. It was filtered, rendered feebly acid with hydrochloric acid, extracted with ether; then rendered alkaline with sodium carbonate, and extracted successively with ether, benzole and amylic alcohol.

The acid ether extract was allowed to evaporate spontaneously, the residue was dissolved in alcohol, acidulated with dilute hydrochloric acid and evaporated on the water bath. The reddish residue was dissolved in water, filtered and tested for ptomaines. It gave no alkaloidal reactions and contained no poison.

The alkaline ether extract, treated in the same manner as the acid extract, gave slight precipitates with phosphomolybdic acid and platinum chloride, but was also inert.

The alkaline benzole extract gave no alkaloidal reaction, and was free from poisonous properties.

The amylic alcohol extract gave slight precipitates, but if it contained any poison the amount was too small to have any effect upon animals.

After the above extractions had been made, the fluid was again rendered acid with dilute hydrochloric acid, and then evaporated in vacuo at 40°C. The residue was treated with absolute alcohol, filtered and again evaporated in vacuo, again taken up with absolute alcohol, and now allowed to evaporate spontaneously. The final residue dissolved in water gave precipitates with many of the alkaloidal reagents, but showed no poisonous properties.

We were now convinced that no poison had yet developed in the meat preparation inoculated with the Iron Mountain water.

Similar examinations were made with the milk and Iron Mountain water, the meat preparation and Lansing water, and the milk and Lansing water, and similar results, so far at least as the failure to detect any poison is concerned, were marked. Indeed, the chemical reactions were reached by only slight variations. The bacterial growths were much more abundant in the Iron Mountain water inoculations than in the others.

November 16th, seven days after the inoculations were made, four flasks, similar to those previously examined, were removed from the vegetation apparatus, and their contents were submitted to analysis similar to those already detailed.

The meat preparation inoculated with the Iron Mountain water was strongly alkaline in reaction, and gave off a marked amine odor. After heing acidified with hydrochloric acid, it was evaporated on the water-bath, the residue was extracted with absolute alcohol and filtered. The filtrate gave a precipitate with an alcoholic solution of mercuric chloride, but the precipitate proved readily soluble in slight excess of the precipitant. The mercury was removed by precipitation with hydrogen sulphide and filtration. The filtrate was evaporated on a water-bath, leaving a syrupy residue, with some crystals of sodium chloride. The syrup was poured off from the crystals, taken up with water, and a portion of it (only a few drops of the syrup) was injected by means of a hypodermic syringe under the skin on the back of a cat. The temperature of the cat before the injection, taken with care and with a tested thermometer in the axilla, was 99.5°. The following is a record of the effect observed in the experiment:

Experiment 1.—Temperature before the injection, 99.5°

Time of injection, 3.14.

Temperature at 3.24, 100.25.

Temperature at 3.44, 101°. The cat drinks a large quantity of water, although she had an abundant supply of milk, which had been within her reach during the day, and of which she had previously partaken. After drinking there is considerable retching, but no vomiting. The respirations are greatly accelerated and jerky. The pupils are dilated, but respond to light.

Temperature at 3.54, 101.8°.

Temperature at 4.19, 101.8°.

Temperature at 4.30, 101.5°.

The temperature was not again taken until the next morning, when it was found to be 99.5°. The animal seemed to have wholly recovered from any discomfort which it had suffered.

Experiment 2.—Two days later a similar amount of the syrupy residue was administered to the same cat in the same manner.

Temperature before the injection, 99.5°.

Time of injection, 4.30.

Temperature at 5.10, 102°.

The temperature was not taken again until next morning, when it was found to be 99.5°.

Experiment 3.—A similar amount of the syrup was administered to another cat.

Temperature before the injection, 100°.

Time of injection, 3.33.

Temperature at 4.08, 101°.

Temperature at 4.33, 101°.

Temperature at 4.50, 101.6°.

Experiment 4.—Dec. 1. A much larger amount of the syrup than that used in the preceding experiments was injected under the skin on the back of a large Maltese cat.

Temperature before the injection, 99.5°.

Time of injection, 4.03 P. M.

Temperature at 4.19 P. M., 94°—marked salivation.

Temperature at 4.44 P. M., 98—pupils are widely dilated. The cat vomits heavily and persistently.

Temperature at 5.30 P. M., 100°. The retching continues and a watery secretion flows from the mouth, nose, and eyes.

Temperature at 6.00 P. M., 100°. Seems in a stupor.

Temperature at 8.00 A. M., Dec. 2, 103.4°. Stupor continues.

Temperature at 1.40 P. M., Dec. 2, 103.4°. When touched on the abdomen the animal cries as if in pain.

Temperature at 4.20 P. M., 104.1°. The animal seems much excited and dashed through the door of the room once, though she had previously been very quiet.

Temperature at 9.15 A. M., Dec. 3, 99.6°. Seems to be recovering, but still looks very haggard. Has eaten nothing since the injection.

Temperature at 1.40 P. M., Dec. 3, 100.8°. Eats some meat.

Temperature at 8.50 A. M., Dec. 4, 99.5°.

The cat was now killed with chloroform and careful examination made of the abdominal and thoracic organs. No abnormality could be found.

Experiment 5.—Some of the syrup obtained from the milk which was inoculated with Iron Mountain water was injected under the skin on the back of a cat. The temperature in this case was taken in the rectum.

Temperature before the injection, 102.5°.

Time of the injection, 3.55 P. M., Dec. 9.

Temperature at 4.40 P. M., 97.6°.

Temperature at 5.25 P. M., 100.9°.

Temperature at 9.05 A. M., Dec. 10, 103.6°.

Temperature at 2.40 P. M., Dec. 10, 102.4°.

Both the meat preparation and the milk, which had been inoculated with the Lansing water, were carried through the same chemical processes to which the Iron Mountain preparation had been submitted, but they yielded only traces of the syrupy residue, and these when injected into animals were without effect. These served as controls for the experiments already detailed, and showed that there was nothing in the meat preparation or milk themselves which could cause the effects observed. As further control, however, the sterilized meat preparation which had been prepared as a control, and which had remained in the vegetation trough for forty days at the temperature of the body without showing any bacterial growth, was treated in the same manner that the other preparations had been, and the alcoholic residue was injected into animals without producing any effect.

Evidently the syrupy residue, which was used in the above experiments, contains a poisonous ptomaine, the special or characteristic production of the micro-organisms present in the Iron Mountain water; and if these are the germs of typhoid fever, this syrup contains the special poison of typhoid fever. In the intestines of a man suffering from typhoid fever, the germs grow and constantly produce the ptomaine which is absorbed and causes the symptoms of the disease. If our extract contains the typhoid fever poison, we should expect it to produce, when employed as in the above experiment, in general the symptoms of the disease, but we should expect these symptoms to be temporary. We think that this is substantially what is shown by the experiments. The primary depression of temperature observed when the larger amounts were employed is certainly nothing more than might be expected from a large dose of a powerful poison; then the elevation of temperature which followed was in the majority of the experiments at least sufficiently marked. We did not expect to find in the animal examined the characteristic intestinal lesions of typhoid fever, as we suppose these to be due to the growth and activity of the micro-organism or to the local action of the ptomaine where it exists in larger amount, the place of its formation.

In 1885, Brieger[1] of Berlin, obtained from pure cultures of the Eberth bacillus, a ptomaine which in Guinea-pigs produced a slight flow of saliva, frequency of respiration, dilatation of the pupils, profuse diarrhœa, paralysis and death within from twenty-four to forty-eight hours. Post mortem examination showed the heart in systole, the lungs hyperæmic, and the intestines contracted and pale. This substance Brieger considers the special poison of typhoid fever, and calls it typhotoxine, and it may be that we shall find that it forms the active principle of our syrupy residue. At present, however, the two do not seem to be identical. Brieger found no elevation of temperature; at least he does not refer to it, while the property of elevating the temperature seems to be the most characteristic effect of the Iron Mountain water poison. Typhotoxine produced profuse diarrhœa; while the other poison has shown no such effect. It may be remarked here that the fever at Iron Mountain has been characterized by the existence of constipation in the majority of the cases.

However, these differences in physiological action may be due to the fact that different animals were used, Guinea-pigs in one case, and cats in the other.

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[1] Weitere Untersuchungen uber Ptomaine.

In 1880, Eberth[1] first described an oval bacillus, which he had found in the spleen and mesenteric glands of persons dead of typhoid fever, and which is now generally believed to be the true germ of this disease. Before Eberth, Koch had observed this germ and had taken microphotographs of it. Even before Koch, Browicz,[2] Sokoloff,[3] Fischel,[4] and others had individually observed in the tissues of typhoid subjects, oval bacilli, which were probably identical with those of Eberth and Koch.

These bacilli are about one-third as large as the red blood-corpuscles of man, and about three times as long as broad, though they may grow to long threads. The short rods have plainly rounded ends, and very active movements. They are affected by the analine colors less than most germs, and are best stained by methylinblue. Whether or not this germ produces spores is a question of much interest to bacteriologists. Gafky[5] found that in potato, gelatine and blood serum cultures kept at the temperature of the body, spores were formed. This observation has been confirmed by Sternberg[6], Flügge und Bolten[7], Vilchour[8], and Chantemesse and Vidal[9]; though on the other hand, Buchner[10], Seitz[11], Michael[12], and Frankel and Simmonds[1] have, after numerous investigations, been unable to detect any spore-formation. This question is also of interest to sanitarians, since germ-spores resist disinfectants, which destroy germs growing without spores. Very recently Birch-Hirschfield[2] has apparently settled this question by detecting the spores by growing the bacillus in stained cultures. Another point of interest to sanitarians is the capability of this germ to resist high and low temperatures. Pruden[3] found them capable of growth after having been frozen in ice for 103 days, and after having been heated to 56° C. This confirms the belief of sanitarians in this country that typhoid fever may be induced by the use of impure ice. The same investigation showed that frequent, alternate freezing and thawing did destroy the germ.

Still another point of interest is the fact that this germ will grow in various media. Seitz[4] and Wolfhügel and Riedel[5] found that it grew abundantly in milk. In our experiments, as has been seen, we obtained the poisonous extract from both the milk and meat cultures, though it was more abundant in the latter. It is worthy of note that the milk culture became acid in reaction, a fact which has also been observed by Löffler[6]. Seitz found that while the bacillus grew in both acid and alkaline urine, its growth was more abundant in the latter. However, it is probably of no sanitary importance whether the germ be taken into the stomach in milk or in water, for, in

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[1] Virchow's Archiv, B. 81 and 83.

[2] Birch-Hirschfeld's Lehrbuch der pathologische Anatomie.

[3] Virchow's Archiv, B. 66.

[4] Prager Medicinische Wochenshrift, 1878.

[5] Mitheilungen aus d. Kais. Gesundheitsamte, B. 2.

[6] Medical News, April, 1887.

[7] Zeitschrift für Hygiene, B. 1.

[8] Lancet, 1886.

[9] Archives de Physiologie, 1887.

[10] Archiv für Hygiene, B. 3.

[11] Bacteriologische Studien zür Typhusätiologie, 1886.

[12] Fortschritte der Medicine, 1886.

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[1] Du ätiologische Bedeutung des Typhusbacillus, 1886.

[2] Archiv für Hygiene, B. 7.

[3] Medical Record, 1887.

[4] L. C.

[5] Arbeiten aus dem Kais. Gesundheits amte. B. 1.

[6] Berliner klinische wochenschrift, 1887.

either case, on reaching the small intestine, it will find an alkaline medium in which to multiply. Wolfhügel and Riedel found that the bacillus multiplied in water which had been boiled, when kept at 16° C. Balton found the "spores" in stagnant water a month and longer after the introduction of the germ. Hochstetter[1] found the germ in artificial seltzer water a week after its introduction. Seitz found that quinine, kairin, antipyrine, thalline, salicylic acid and calomel in certain proportions, arrest the growth of the germ in cultures, but that naphthalin, which seems to be a useful intestinal disinfectant in some diseases, is without effect upon the typhoid bacillus.

Upon potatoes, the typhoid bacillus shows a characteristic growth. It forms a mould wholly invisible to the unaided eye. After three or four days, if kept at ordinary temperature, after two days if kept at the temperature of the body, the surface of the potato looks moist, but no other change is observable. If the surface be scraped with a sterilized needle and the material thus obtained be examined under a sufficient power, it will be found to consist of active, moving typhoid bacilli. By making potato cultures this bacillus can be distinguished from all known germs. Indeed, the best bacteriologists regard the potato culture as the crucial test for the typhoid bacillus, and this test must always be made before one can be certain that he has this germ.

That the Iron Mountain water contained the typhoid bacillus was demonstrated by the potato culture and by microscopical examination, as well as by a physiological experiment. The first cultures were made as has been stated, Nov. 9, about two weeks after the water had been received. These cultures contained, besides the typhoid bacillus, germs ordinarily found in water; but the second cultures, made Dec. 7, contained only the typhoid bacillus. These had either destroyed or outlived the non-pathogenic organisms. This is an interesting fact, since it shows the poisonous germ to be very tenacious of life. Moreover, this observation is at variance with that of Kraus', who found that the ordinary water bacteria destroyed the typhoid bacillus, though this difference may be due to the different temperatures at which the water was kept. Kraus kept the water in his experiment at 10½° C., while the Iron Mountain water was kept in a jug, in a basement room, the temperature of which was about 20° C.

In the meat peptone preparation the bacillus formed a scum, which had the lustre of mother of pearl and was bluish-gray, becoming slightly brownish after some weeks. Some of this growth was removed with a sterilized rod, rubbed up with 2 c. c. of water, which had been boiled, taken into a large, sterilized hypodermic syringe and injected into the abdominal cavity of a cat. Before the injection the hair was cut from the abdomen at the place of injection, and the skin was washed first with absolute alcohol and then with one-half per cent. solution of mercuric chloride. The injection was made at 2.25 P. M., Dec. 20. The temperature of the cat, taken in the rectum, before the injection was 101.5°. Twenty minutes after the injection there was a fecal movement, and a few moments later the animal vomited. The vomiting was repeated four or five times during the afternoon. When not vomiting or attempting to do so the animal seemed greatly prostrated. She rested on her abdomen with her chin upon the floor and could not be easily aroused. She made several attempts at stool, but there was no purging or diarrhœa.

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[1] Centralblatt für Bakteriologie und Parasitenkunde, B. I.

Dec. 21, 7.45 A. M.—The cat still lies in the same position. She refuses food. The temperature in the rectum is 96.4°.

2.30 P. M.—Cat still lies upon the floor and refuses milk. Temperature, 98.5°.

4.20 P. M.—Temperature, 101.4°.

5.30 P. M.—Temperature, 101.8°.

Dec. 22, 8.00 A. M.—Cat seems some better, but refuses food and is very weak. She is unable to cry aloud. Temperature, 103°.

2.30 P. M.—Takes some milk; temperature, 104°.

4.20 P. M.—Temperature, 104.4°.

Dec. 23.—The cat seems to be recovering rapidly. She takes food greedily and the temperature is normal.

The animal was then killed with chloroform. There was nothing abnormal at the point of injection. Nothing abnormal could be found in the peritoneal cavity. No trace of the small masses of injected bacilli could be found. The mucous membrane of the small intestines was slightly hyperæmic and in the region of Peyer's glands were observed four little ulcerations about the size of a pinhead. Two or three similar ones were found in the ascending colon, but one of these was about four times as large as those in the small intestines, and around this was quite an area marked by inflammatory action. Careful inspection of all the abdominal and thoracic organs failed to reveal any further abnormality.

This result was very satisfactory, and leaves no room for doubt concerning the existence of the specific poison of typhoid fever in the Iron Mountain water.

See Announcements for 1888 on Advertising Page vii.

DANGERS IN GASOLINE.

BY JOHN H. KELLOGG, M. D., MEMBER OF THE MICHIGAN STATE BOARD OF HEALTH.

[Reprinted from the Annual Report of the Michigan State Board of Health, for the year 1887.]

The extensive introduction of gasoline stoves within the last few years has brought into very general domestic use an article, the presence of which in a dwelling-house is a constant menace to life and property. Gasoline, since its discovery, has always been known to chemists to be a dangerous substance. It evaporates rapidly at ordinary temperatures, and its vapor, when mixed with ordinary air, in proper proportion, forms an explosive compound the same as does ordinary illuminating gas. It is stated that one pint of gasoline, when evaporated, will render explosive two hundred cubic feet of air. The vapor of gasoline is, in some respects, more dangerous than common illuminating gas, especially the variety of gasoline which is ordinarily used in connection with gasoline stoves.

1. Because it is somewhat heavier than the air, instead of lighter, as is the case with illuminating gas. On this account, it accumulates in greatest quantity near the floor, and thus its presence is not so quickly detected, and it more readily comes in contact with fire in grates or stoves, and it does not so readily find an outlet through open windows, the ordinary means of ventilation.

2. The gasoline recommended by the manufacturers of gasoline stoves, and ordinarily employed in their use, having been deprived to a great degree of its characteristic odor, is much less readily detected in the air of a room than the same quantity of illuminating gas.

3. Illuminating gas is suffocative in its effects, as well as extremely unpleasant in odor, so that its presence becomes

unbearable long before the proportion present in the air of a room becomes so great as to render it explosive.

Several years ago this Board called attention to the dangers of using explosive kerosene oil; and protective legislation has been maintained, which has doubtless been the means of saving many lives. Before the enactment of the laws referred to, loss of life and serious injuries from kerosene explosions were exceedingly frequent, but at the present time, casualties from this cause in Michigan are almost unknown. This safety in the use of kerosene oil has been secured by the more perfect separation from it of the explosive products of coal oil. Gasoline is one of the most explosive substances obtainable from coal oil, and it is not to be wondered at that the extensive use of this dangerous article of late years, has led to frequent distressing accidents, usually involving grave personal injury and often loss of life. The increasing frequency of these accidents has led this Board to undertake an inquiry into the matter, the results of which are, in part, embodied in this circular.

A letter was addressed to each of the leading manufacturers of gasoline stoves, asking for descriptive circulars and directions for the use and care of a gasoline stove. A careful examination of these circulars failed to discover any proper warning respecting its safe keeping or handling. Indeed, the evident effort of manufacturers and dealers is to convince the public that the use of gasoline is *perfectly safe*, although it is well enough known to every one familiar with its properties, that a mixture of the vapor of gasoline with common air, in proper proportions, is as violently explosive as gunpowder, and many other explosive substances. It is true that gasoline may be handled in such a manner that the risk of explosion and consequent injury, may be made very small. The same is true, however, of gunpowder, nitro-glycerine, and dynamite. But these substances not infrequently explode with most destructive violence, even in the hands of those who are educated respecting their character, and trained in their use. This fact restricts the handling of the explosives mentioned, to very few persons, and their employment to those uses for which no other substances can be well substituted. Certainly, no one would think of placing gunpowder or nitro-glycerine in the hands of ignorant or unskilled persons, even though precise instructions respecting their use might accompany the destructive articles; yet this is precisely what is being done in the most extensive manner with gasoline, an explosive in all respects more dangerous than gunpowder. Gunpowder will not explode unless fire is brought in immediate contact with it. It certainly will not leave the can containing it, should the cover happen to be left off, and insidiously find its way to a fire, a lighted lamp, or other means by which an explosion may be produced. But this may occur with gasoline. Notwithstanding these well known facts, thousands of gasoline stoves, and the gasoline employed in them, are to-day, in the hands of ignorant persons, many of whom are, perhaps, ignorant of the explosive nature of the vapor of gasoline, and who, at least, seldom appreciate the extent of the danger to which they and other persons are exposed in its use.

A circular letter addressed to the officers and general agents of the leading insurance companies doing business in this country, elicited a large number of replies, the writers of which, with barely two exceptions, pronounce the domestic use of gasoline as a fuel extremely dangerous, and greatly deplore the general introduction of gasoline stoves, not only on account of the increased risk to property, but of the great risk of serious personal injury or loss of life. Although not requested to withhold the names of the writers of these letters, we quote without credit, for brevity's sake, the following opinions and statements from the great number of letters received.

A general insurance agent writes:

"I have known of at least twenty-five cases in which the use of gasoline stoves caused a loss of life and injury, and from my experience of them, I would not have one in my house under any circumstances, as in my judgment *they cannot be made safe.*"

A general agent doing business in Detroit states, under date of Nov. 15: "On the first of July I commenced keeping a private record of gasoline stove accidents, and so far have a list of eight." (Eight accidents in one city of the size of Detroit, in four and one-half months, is certainly not a good record."

An insurance agent doing business in one of the leading towns of the State, a city of about 20,000 inhabitants, and who has given special attention to this subject, states on the authority of the chief engineer of the city fire department, that eight fires from gasoline stoves have occurred in that city within four years, aggregating a loss of several thousand dollars; and adds that in his opinion "the first duty of every municipality in the State of Michigan, should be the adoption of a rigid law relative to, and governing the storage and use of gasoline, and the issuing by circular or other efficient means of information to the people, educating and admonishing them as to its nature and its use; better still, an ordinance excluding it altogether." He pronounces gasoline "more dangerous to have around than gunpowder."

The secretary of a large insurance company writes: "Our impression from the accounts in the daily papers, is that the losses of life and property (from the use of gasoline as fuel) have been very considerable." "As every one must be aware who reads the newspapers, the losses to life and property are much too frequent and disastrous. As insurers, we should be glad to see its use for fires entirely abandoned."

Another general agent writes: "There have been a great number of accidents from the use of gasoline stoves," and states, "I would not permit one in my house under any circumstances." "The stoves of to day are doubtless of better make than the first, but guarded with even the perfection of care, the insidious vapor arising from gasoline is extremely dangerous, and seizes every opportunity to join itself to fire or light, however distant."

An insurance agent residing at Jackson, Mich., mentions two deaths as having occurred in that city from the result of gasoline, of which he says: "In the cases mentioned, the death of one, Mrs. G. Stevenson, was caused by setting the can too close to the flame of the stove, thereby causing it to explode, throwing the gasoline all over her. The death of Mrs. A. Porter was occasioned by grease igniting on the stove, the heat from which caused the tank to explode, scattering the gasoline over her." He adds, "the chief of our fire department informs me that the department has been called out nineteen times, by reason of leak and explosion of gasoline stoves, within two years."

Another general agent states: "We have paid several losses for fire caused by the explosion of gasoline stoves. Where great care is exercised, they may be used safely; but familiarity renders people careless."

A State agent of one of the largest insurance companies in the country writes: "If I should express my own opinion on the subject, it would be as follows: Gasoline is by its very nature a dangerous substance to have anywhere; further, the gasoline stoves in general use, while very well constructed, and fairly good when new, will get defective while in use, and when defective are very dangerous, and a possible source of great damage to life and property. I consider their use in any family composed, in part, of young children, to be almost criminal."

Descriptions of a number of cases of loss of life, occurring through the use of gasoline, in connection with gasoline stoves, were included in the replies received. In most of these cases, the explosion occurred as the result of turning on a little too much gasoline before lighting it, placing the can or other vessel holding gasoline too near the flame of the stove, or lighting a match in the vicinity of an open can. Nearly all of these accidents may be charged to carelessness; but is it not questionable whether an article which by so slight neglect or carelessness may be productive of so great mischief is not too dangerous an article for domestic use? The majority of domestics are habitually careless, especially respecting matters in which they have not been trained to careful habits. When we add to this fact the ignorance respecting the dangerous character of the substance which they are handling and the soothing assurance of the manufacturer and dealer that the particular style of stove in use is "perfectly safe," is it not remarkable that the number of distressing and fatal accidents is not vastly greater than it is?

Attention should be called to the fact that the statistics of losses from various causes are misleading as regards the danger from the use of gasoline. While it is true that fewer fires result from gasoline than from defective chimneys, stoves, or kerosene lamps, it must be recollected that the number of each of these causes in active operation is vastly greater than the number of gasoline stoves. The loss from eleven explosions in 1886 was $154,000.

We found in the circular of one of the leading manufacturers an inadvertent confession of the dangerous character of these stoves in the statement that a particular device recently added to this special stove "makes this the safest and simplest stove on the market."

In a letter received from the manufacturer of another popular stove, the acknowledgment is made that "the gas from gasoline when allowed to evaporate, mixed with air, is stuff that is explosive." To allay fears, however, the same writer added, "you are all right if you do not go near it with a lamp or fire of any kind." If this were true, the thing which is forbidden is precisely what some child or thoughtless person is certain to do, and, as previously mentioned, even if no person takes a lamp or fire to the gasoline, the gasoline may vaporize and go some distance to a lamp or fire, when the most disastrous results are likely to follow.

Is it not a very grave question whether the acknowledged convenience of gasoline as a fuel is not vastly more than counterbalanced by the positive dangers involved in its use?

RULES FOR THE USE AND CARE OF GASOLINE.

Every person employing or keeping gasoline should keep constantly in mind the following facts and cautions respecting its use:

1. Gasoline is an extremely dangerous explosive substance.

2. It should be kept in a cool, well ventilated place, if possible out of doors,

or in an out-building; never in a kitchen, closet, or cellar.

3. A vessel containing gasoline, unless tightly closed, should never be brought within ten feet of a lamp, stove, grate, flame, or fire of any sort. The small flame of a match or even a spark is sufficient to explode the gas when present in sufficient quantity.

4. The vapor of gasoline may be carried by a draught or current of air, and thus be brought in contact with fire at considerable distance, even greater than that mentioned in the preceding paragraph; consequently gasoline should never be opened or poured from one vessel to another in a current of air, unless the current is from the room out of doors.

5. The danger in connection with the use of gasoline stoves is not so much in the stoves themselves as in having the gasoline about; yet by continued use, the valves of a stove may become worn so that leaks may occur, and thus a stove may become a source of great danger.

6. If an overflow of gas occurs from being turned on too freely, from leakage of valves, or from the blowing out of the generating burner, as sometimes accidentally occurs, the surplus gasoline should be carefully wiped up, and the room should be well aired by the opening up of windows and doors before the burner is lighted.

7. If an open vessel containing gasoline has been standing in a room over night, or an overflow has occurred during the night, or if there is found in a room a strong smell of gasoline at any time, the room should be opened and well aired, and before a match is lighted or a lighted lamp or candle carried into the room.

8. Gasoline should never be used for lighting a fire. An explosion, which may possibly be fatal in its effects, is almost certain to follow. Persons have been maimed for life in this way.

9. The use of gasoline lamps is, if possible, attended with even greater dangers than the use of gasoline stoves.

10. A wise regard for safety will lead to the disuse of gasoline in any form for domestic purposes.

11. Gas or kerosene stoves may be safely substituted for gasoline stoves, but neither gas, gasoline, nor kerosene stoves are so safe or healthful as the ordinary wood or coal stove. The ordinary stove aids in the ventilation of the room, and carries away the poisonous gases formed by the combustion of the fuel, whereas the other forms of stoves discharge the products of combustion into the air of the room, compelling the occupants to breathe the poisonous gases. Neither gas, gasoline, nor kerosene stoves should ever be employed in other than very open or well ventilated rooms, unless provided with a special flue or ventilating duct for the purpose of carrying off the products of combustion.

SUGAR.

BY EPHRAIM CUTTER, M.D., LL.D., F.S.SC., (LOND.), OF NEW YORK CITY.

SUGAR TO BE USED IN SMALL QUANTITIES.

The conventional idea of sugar is that it is a perfect food, relished if not craved by the palate and not a relish.

If a guest is entertained, the host thinks that the prime duty of hospitality is not discharged 'ere the culinary products which are sweetened with sugar have been served. Indeed, dispensing sugar to the guest is everywhere regarded as necessary, while dispensing with sugar would be the best for the guest because sugar in excess in the alimentary canal ferments into alcohol, carbonic acid, vinegar, etc. Sugar is a carbohydrate, that is, made up of carbon, hydrogen and oxygen, and hence makes fat and fatty degenerations when used in excess, as is apt to be the case at entertainments followed up for a long time.

Fat in excess is a disease and the foundation of Bright's disease, apoplexy, paralysis, fatty heart, liver, kidneys, muscles, bones and fatty tumors.

Another thing, the liver makes all the sugar needed for the system when none is taken in the food.

When it is remembered that all the starch taken into the system in the vegetable foods has to be converted into sugar 'ere it is appropriated, it is easy to see how the business of the liver can be superceded and impeded by an excess of sugar. Sugar is the fuel of the human body burnt up in the lungs. If any one disbelieves this, simply cover up head and all on retiring to bed and the amount of heat produced from the air passages will be appreciated. For this reason, in cold weather especially, it is best to breathe through the nose so as to retain the body heat as much as possible. The warmth of crowded rooms, specially at night, a good deal comes from the breath of the audience.

Sugar is not a good thing to build up tissues as it has only three (3) elements, while the tissues need ten or more, hence the use of sugar for children is not good. The writer thinks that a good deal of the deterioration of teeth, eyes, hair, etc., may in part be explained by sugar in excess in the food on chemical grounds alone.

Hens fed on sugar lay shelless eggs with white yolks, (Deacon Forbes, of Cambridge, Mass., authority).

When the liver makes too much sugar, we have a disease called diabetes mellitus, which is accompanied with a notable wasting and consumption of tissue. It is said that the natural love of man for sugar makes it wholesome. Instinct cannot be always followed. Besides the love of sugar is a matter of education as shown by the writer's own case. Until within two or three years I have always used sugar freely in tea and coffee. I could not drink it without sugar as it was so pleasant to my taste. But after the age of fifty years, I felt that I was in danger of the diseases of fatty degeneration of the kidneys, liver, heart, brain, etc. So for this pathological reason, I gave up the use of sugar, preferring to eat to live instead of eating to die. I expected to have to fight a good deal with my unsatisfied love of sugar, but the "unexpected happened," for I found my love for coffee and tea without sugar was greater than my love for the same with sugar. So that now, sugar in my tea and coffee is as distasteful as before the tea and coffee were without sugar. And this state of things continues, so that I find myself somewhat of a sufferer when obliged to drink tea and coffee in the old way. I think this is not a solitary case. A patient remarked, since this was written, on how hard it was for her to give up sugar, and supposed it was so until after five months abstinence she tasted some coffee which she did not like. On observation it was found to contain some sugar put in by accident. This remark was made as a matter of her history and not elicited by cross-questions.

I find it pleasant to be able to taste the natural flavor of food which before, the taste of sugar covered up. The physiological effects of lemons without sugar, have proved very beneficial to my liver. Now if the æsthetic results of eating sugar are the main things, and if I gain the same æsthetic result without sugar and besides without the physiological troubles therefrom, why is it not better to do without the sugar so long as I have as much if not more pleasure from my tea and coffee now as before? This is taking a low view of the matter I admit, but as a subject of such tremendous import, we must view it from all standpoints. I am aware that some live to eat and drink, and the intense subjective pleasures thus enjoyed is their great end of life. Only yesterday a man told a story in the horse car of a dying man sending out for a lawyer, presumably to make his will, when the lawyer came, he stammered out, "I advise you to eat and drink all you can as the chief end of life."

To this class, I say you defeat your own ends, your reckless use of sugar for example, with all its pleasures is offset by the reversed peristaltic action of the alimentary canal, that comes from dyspepsia, fatty degeneration, premature decay, etc., while as experience shows, those who have the stamina of character to deny themselves. enjoy the food as well as you do, and at the same time are free from the torments of disease, its incapacitating power and live longer, happier and more useful lives. The account of the fall of man in Paradise has a peculiar significance when viewed in the light of food as eaten at the present time by some. "It is probable that more trouble comes from bad eating than drinking." (*Salisbury*).

It is a matter of newspaper report that those miserable beings whose sole object in life is to eat and drink and waste themselves in other ways, and whose "stamping grounds" are the swell restaurants and some of the club houses, find it necessary to cut down on what they eat and drink during several months of every year, otherwise their faces will become loathsome to the eye and their lives will be jeopardized. The curious thing about it is, that these idlers know full well what they are doing, and they must of physiological necessity feel better when eating and drinking abstemiously, but after a period of deprivation they go at their riotous living again.—*J. A. C.*

CANDY

needs a mention here, as once I put a patient in consumption on strict diet telling her to eat no sugar. Much to my disappointment the morphology of the blood and sputum—the physical signs—and the general appearances of the patient showed no improvement. After long searching I found she was eating candy *ad libitum* as she thought it was not sugar.

Candy is merely another form (allotropic) of sugar caused by the action of heat and while in a semi-solid state, it bears the same relation physically to sugar as wrought iron does to cast iron. In cast iron there is a crystallization more or less complete of the metal. In wrought iron these crystals are spun out into threads and woven into an inextricable web so to speak. In candy the sugar crystals are spun into filaments and inextricably drawn out and mixed together.

The chemical elements are the same in candy as in sugar; so are the food relations the same.

ABOUT GIVING CHILDREN CANDY.

This meets a mother at every turn. It is the conventional idea to give candy to children freely. To those who say that candy injures the teeth, reply is made that a certain dentist soaked teeth detached from the jaw in a solution of sugar, but they did not decay; hence sugar is harmless.

But this is a very different thing from eating sugar, getting it into the system and making teeth feed on them as food. Teeth feed like any other parts of the body, though with not the same rapidity. The popular notion is that our bodies change all over once in seven years—that is, in the process of the body substance, being taken up and rejected as effete matter and replaced by a new substance, takes seven years, not that the whole body is a new one, but it is constantly changing, and it takes seven years to get round. It is said at Naples there are three hundred and sixty-five pits prepared for the dead and arranged in a circle. Each day a pit is opened and filled with the dead of that day, smothered in lime. By the end of the year this pit will be again opened, and nothing but bones remain, which will be buried in boxes elsewhere. Very much the same process obtains in the Pere la Chaise Cemetery, only the time is longer and no lime is used. This I saw myself. Now, to carry out the simile in the human body, it takes, according to the conventional notion, 2555 days to bury it while living; but the process is really much more rapid. Sir Lionel Playfair says the human body, save the hair, teeth and nails, change once in seven months. I think he is right; and one evidence in this direction is shown by the teeth in some experiments made by Dr. G. B. Harriman, of Boston, which are crucial, unique and well authenticated.

Having a family where sugar and candy were freely consumed, he found the teeth of the children to be decayed, ill-developed, but especially soft, friable and chalky in texture. He sent some of them into the forests of Maine, where the sugary food was replaced by animal food mainly, and by the fresh air of the woods. On their return he found the texture of their teeth no longer chalky and friable, but restored to the normal fibrous texture.

The writer's teeth, since he gave up his sugar in his tea and coffee, have improved in texture, decay has ceased, and the teeth are really in better condition than ever before.

It is not intended to be ultra in these statements, and attribute all decay of teeth to the use of candy and sugar alone. But if we compare a nation like ours where sugar is used freely, and dentists abound more than in any other country (it is said), where children have artificial dentures at fifteen years of age, where premature baldness, grey hairs and defective eyes are common,—with the nation of Patagonia, for example, where sugar is not an article of diet, and you will find, if I am correctly informed, that there are few persons prematurely bald or blind, or with small stature, or bad teeth. Not to say there are none such, but the proportion is infinitely less. I have been told that negroes' teeth in the South in the vicinage of the sugar plantations are very good; and this has been denied. Also it is said mummies have been found with decayed teeth, and savages, too. Granted. Still the great facts remain that we have too great a prevalence of decayed teeth and too enormous consumption of sugar, while on the other hand the positive instances of improvement from abandoning sugar above given are authentic; and moreover, how can a food containing but three chemical elements, properly nourish tissues which are made up of so many more elements than these three?

According to Gamgee (see "Physiological Chemistry of the Animal Body," by Arthur Gamgee, M.D., F.R.S., Professor in the Victoria University, Manchester; Brackenbury, Professor of Physiology in the Owens' College), the hard tissues of the teeth are the enamel, dentine and crusta petrosa. With the pulp we will not concern ourselves, though its nourishment is as important matter as that of the remainder of the tooth. Enamel of a woman's molar contained calcium phosphate, with a little calcium fluoride, 89 82; calcium carbonate, 4.37; magnesium phosphate, 1.34; soluble salts, 0.88; total inorganic matter, 96.41; organic matter, 3.59.

Dentine: man, molar, contained calcium phosphate, with a little calcium fluoride, 66.72; calcium carbonate, 3.30; magnesium phosphate, 1.08; soluble salts, 0.88; total inorganic matter, 71.99; organic matter, 28.00.

He does not give the analysis of the crusta petrosa of a human being; but we find in that of the ox, incisor, to be 58.00, 7.22, 0.99, 0.73, 66.94, 33.06.

Meat, according to this same author, contains all the elements found in teeth, and many others besides, with the exception perhaps of fluorine, and should be a proper food for dentinal tissues.

There is no doubt sugar is a good food properly used. Abuse is no argument against use. Water may be abused by holding a man under it for half an hour, as this would be very unhealthy; but no one would cease to drink water on this account.

The danger about sugar as a sweetening substance and candy is, as has been stated, getting it in enormous excess, far beyond the needs of the human system, and trying to build up solids and semi-solid tissues as teeth, bones, hair, eyes, etc., on a substance which has but three (3) chemical elements.

As I tell mothers, trying to build up the human body on sugar is like going to a dressmaker, furnishing her with all the materials and implements necessary to make a dress, saying to her: "Here, I want you to make me a dress out of these (3) things:" (1) the dress-pattern, (2) a pair of scissors, (3) a skein of thread. The result would be *nil.* Would it were so when the mother tries to build up teeth with sugar, for then the results would be more palpable and decisive? But the human body is wonderful in its adaptation to untoward circumstances, and so to speak goes ahead and does the best it can. It may get the mineral elements from the drinking water, or some other article of food, and thus patch up some teeth, but pretty poor ones at that. Is this satisfactory? Do mothers want anything but the best for their children? Cut down the sugar to a moderate use, and do not forget the following remembers:

1. *Remember.*—All the starch found in our food, in potatoes, bread, puddings, fruit, etc., is changed into glucose—ere digestion or assimilation is accomplished. So bread, potatoes, etc., must be regarded as so much sugar food—enough for the system; any copious addition of sugar in excess is damaging. There is such a thing as intemperance in sugar eating; and as sugar makes alcohol, carbonic acid gas, vinegar, etc., so the eating of it in excess clogs, annoys and finally luckily cloys. No one can live on sugar alone, even if he could get it down. There is then no need of warning against the use of sugar alone. But it is against the use of sugar solely to gratify the palate at the expense of producing such diseases as consumption of the bowels, consumption of the lungs; for these are, in the writer's opinion, fermentative diseases in which vinegar yeast flourishes. This yeast is almost invariably attended with bacteria, as microscopists have known for a very long time.

To prove this: It is a common experience to take cases of consumption of the lungs and by excluding sugar from the diet, remove the vinegar yeast from the blood, take away the massive fibrine filaments, restore the red and white blood corpuscles to normal character, etc., and then by one or two teaspoonfuls of common sugar in the tea, or coffee, or hot water, have the abnormal yeast and the other features invade at once the blood again.

I have noted this for fifteen years in my own experience, and it tallies with that of others.

2. *Remember.*—The effect of one teaspoonful of watery solution of sugar.

That these statements as to the power

of sugar may be upheld, reference is made to the experiments by Drs. B. W. Richardson, of London, and S. Weir Mitchell, of Philadelphia, published more than twenty-one years ago, in relation to guinea-pigs and rabbits. They found that the injection of a teaspoonful of a saturated solution of common sugar beneath the skin of a guinea-pig or rabbit would produce, in twenty minutes time, cataract in both eyes.

Now cataract is a fatty or waxy degeneration of the fibres of the crystalline lens of the eye; and the fact that sugar produces this degeneration in so short a time proves that sugar is not the innocent, inactive substance it seems to be. Indeed I know of no medicine in therapeutics that will produce such results. The only approach to it is phosphorus in poisonous doses. I once saw the kidneys and heart of a man who died in twenty minutes after taking phosphorus, and they were in a state of fatty degeneration of the acutest kind! Nothing was said about the eyes in this case, but I think some lesions would have been detected had they been examined, as the eyes, heart and kidneys are fellow sufferers in most cases of fatty degeneration.

3.—*Remember* that glucose is formed by the action of dilute sulphuric acid on starch. It also forms within the body from digestion. It is not so sweet as its name implies as sugar, which is cane sugar. It is not so soluble and does not crystallize out. Used in excess I suppose it is just as much out of place and injurious. Still I cannot join in the wholesale denunciation it receives now-a-days when properly made, but it is not a good food in excess.

4.—*Remember* that the other sugars found in food, molasses, sugar of milk, maltose, sugar of raisins, dates, figs, honeys, fruits of all kinds, make quite a list. They should be *used with moderation* and in their natural combinations, as honey, dates, figs and fruits by healthy people, not as sole food.

I suppose white sugar is the poorest of all the sugars because the others have some mineral elements to go with them to make good food for tissues. For example, the juice of the sugar cane is better than white pure sugar.

What the danger of sugar in excess is: That in the pure state or in the natural state, it ferments in the alimentary canal. This fermentation and its products are the cause of disease, make the system run with friction, prevents the elimination of effete products, allowing these products to accumulate in the system, making it harder work to digest food, to run the system, keep the heart going, to feed the nerves, build up tissues or take them away, leave less force for work outside the body, make people cross, irritable, peevish and ugly. So they cripple the powers of life and besides, after long continued feeding, produce positive disease and death as above stated.

POSTHUMOUS BENEVOLENCE.

It is reported in the *Pall Mall Gazette* that Richard Berridge, who died lately, leaving $1,000,000 "in trust to apply the same to the advancement and propagation of education in economic and sanitary science in Great Britain," and who ruled out the words, "and Ireland," from the draft, was the largest landed proprietor in Ireland. His tenantry were wretchedly poor, and Mr. Berridge, who united with the trade of brewer that of bill discounter, was very much dissatisfied that he was unable to increase the already too heavily raised rental of the small farmers and laborers who inhabited his territory.

Special Reports.

REPORT ON THE IMPROVED DRAINAGE SYSTEM OF THE EXECUTIVE MANSION AT HARRISBURG.

BY BENJAMIN LEE, M. D.,
Secretary State Board of Health of Pennsylvania.

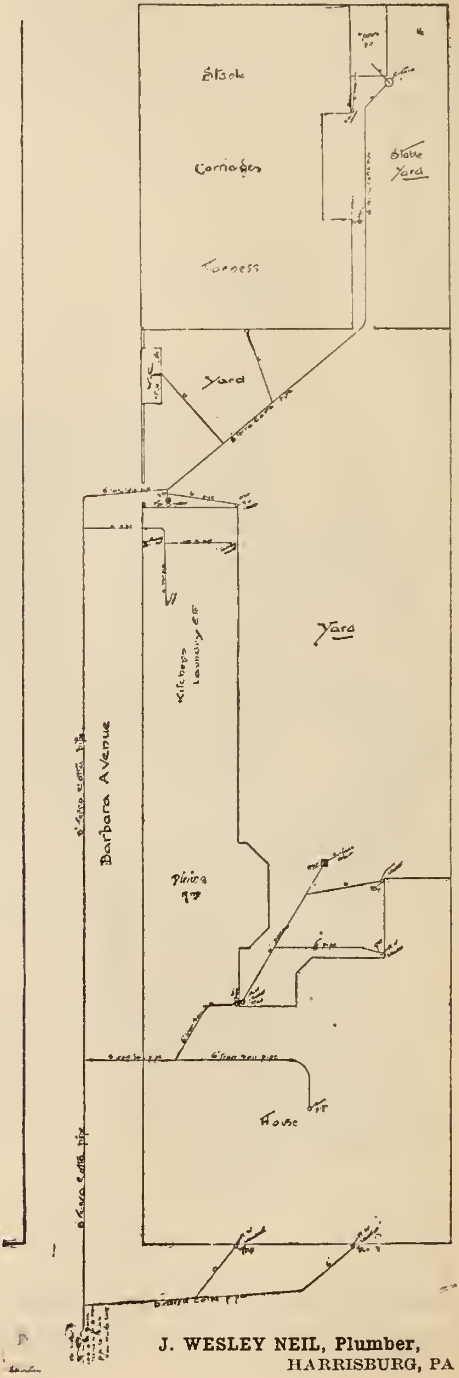
One year ago, in consequence of a series of occurrences pointing to unhealthful conditions existing in the official residence of the Governor of the State, a careful inspection of that building and its appurtenances was made by the Secretary in company with Captain Stackpole, Superintendent of Public Grounds and Buildings, whose courtesy on the occasion it is desired in this place to acknowledge, Dr. Hugh Hamilton, of Harrisburg, Chairman of the Sanitary Committee of the Dauphin County Medical Society, and Messrs. J. Wesley Neil, of Harrisburg, and James G. Bryan, of Philadelphia, plumbers. Serious defects were then noted in the plumbing and drainage system, defects of design rather than of construction or material, which could not but have had a prejudicial effect on the health of the occupants of the mansion. These defects were indicated in a report made to the Board and forwarded to His Excellency, the Governor. Since that time the building has been thoroughly repaired and remodeled, and it is a matter of great satisfaction to be able to report that the objectionable features referred to have all been removed. The brick sewer which then ran directly under the main building has been torn out, and in place of this an eight-inch *terra cotta* pipe has been laid in the adjoining alley on the right, starting at a point somewhat in the rear of the back building. All the stable and yard cesspool sewage, therefore, which formerly passed under the house, is now carried off before reaching it. The kitchen and laundry waste is discharged by means of four-inch iron pipes directly through the lateral wall into the *terra cotta* drain. The leaders of the roof of the back portion of the main building, the surface drain of the contiguous portion of the yard and the water-closets, all drain through six-inch iron soil pipes to an eight-inch soil pipe, which passes at once through the wall to join the main drain already described. This continues one hundred feet to the edge of the high bluff forming the river bank, receiving just outside the front side-walk, the rain-water from the two front leaders. All the leaders are trapped outside the house wall. Reaching the river bank, the *terra cotta* pipe terminates in an eight-inch iron pipe, which descends the steep incline of the bank, and is extended out along the bed of the river to a point below low-water mark.

The ventilating pipes all now pass up above the level of the ridge pole of the roof, so that the serious defect in that respect, noted in the previous report, has ceased to exist. It only now remains to give the cellar floors a good coating of cement, which will be done during the summer vacation, to complete the sanitary improvements which the Board suggested.

A word as to the heating of the mansion may not be out of place. This is effected to the entire satisfaction of its occupants, in the most complete manner, by the appliances of the Harrisburg Steam Heating and Power Company. The steam is generated at the company's works and carried in iron pipes encased in thick wooden conduits, under the streets of the city to the public buildings, private residences and manufactories. There are seventy-three radiators in the cellars. These are enclosed in double wooden chambers, into which fresh air is introduced from out of doors. This air becomes rapidly heated, and then passes up to be distributed throughout the house. No more perfect or healthful system of heating a large house in our severe climate could be imagined. Harrisburg is to be congratulated in having forestalled most large cities in the country in this important advance in one of the essential arts of life. The lighting is done by electricity, under the auspices of the Harrisburg Edison Incandescent Electric Light Company, perhaps the most successful company of the kind in the United States. Two of the great problems of housekeeping are here thus most satisfactorily solved.

So far as the house itself is concerned, therefore, there is every reason to congratulate our worthy chief executive on having a home void of offence. There still remains however the condition of the river bank to constitute a menace to the health of all whose residences face it or are in close proximity to it. For, while the drainage of this particular house is carried out to a point in the river, whence the water can always be relied upon to remove it, and in a perfectly secure air-tight conductor, the same cannot be said of that of all, or, it is feared, of most, of the houses which use the river as a sewer. Many of the drain pipes are broken and leaking. Others do not continue sufficiently far into the river. Hence the bank is constantly kept soaked with sewage. One of the first complaints received by the board was of the dumping of night soil into the river by the cart load, directly in front of some of the finest residences on this beautiful street. The natural advantages of this side are unsurpassed. The views, whether looking up to the towering and rugged ramparts of the gap, across to the charming islands and the wooded slopes of Cumberland, or down through the labyrinth of bridges to the softened outlines of the foot-hills, are beyond description beautiful. "*Every prospect pleases and only man is vile.*" The crying need of the city is a grand trunk, intercepting sewer which shall carry the filth which its seventeen public sewers and numerous private drains are pouring out immediately in its face to a point far below the town and discharge it a long distance out under water where it shall be innocuous. It is a question whether the State does not owe it to itself and to its public servants, who are forced to make Harrisburg their residence, to unite with the municipal authorities in making this important improvement. This done, a comparatively small outlay would convert the shores, which are now simply an ash and garbage dump, offensive to more than one sense, into a public garden of such entrancing beauty that lovers of the picturesque would come

DRAINAGE SYSTEM, EXECUTIVE MANSION,
HARRISBURG, PA.
Scale, ⅛ to 1 Foot.



J. WESLEY NEIL, Plumber,
HARRISBURG, PA

from all parts of the Union to enjoy it, and its blooms would exhale health where now rises the miasm of disease. Plantations of the various members of the sunflower family, judiciously disposed, would add brilliancy to the scene while they interposed an obstacle to the stealthy approach of the natural malarial vapors which still cling to the stream at certain seasons. If Harrisburg is to continue to be the capitol of the State, *and there are many good and sufficient reasons why it should so continue*, some such step is inevitable in the not distant future.

STATE SANITARY CONVENTION.

At Lewisburg, Union county, Pa. To be held under the auspices of the State Board of Health, Thursday and Friday, May 17 and 18, 1888.

PRELIMINARY ANNOUNCEMENT.

(Subject to amendment.)

FIRST DAY.—Opening Address, by His Excellency, the Governor of Pennsylvania.

Address of Welcome, by D. J. Hill, L.L.D., President of Bucknell University.

"The Prevention of Contagious Ophthalmia," Dr. P. N. K. Schwenk, of Philadelphia.

"Diseased Meats and the Prevention of Trichinosis," Dr. G. W. Fury, Sunbury, Pa.

"The Water Supply of Lewisburg," Prof. W. G. Owens, Bucknell University.

EVENING SESSION.—Annual Address, Hon. S. T. Davis, M.D., Lancaster, Pa.

"Cremation, as a means of disposal of the Dead," Dr. B. Y. Hyatt, Lewisburg, Pa.

SECOND DAY, 9 A.M.—"Small-Pox in Country Places," Dr. Fetterolf, Mazeppa, Pa.

"Hygiene of the Teeth," Dr. H. Gerhart, Lewisburg, Pa.

"Insanity among Women," Alice Bennett, M.D., Norristown, Pa.

"Sanitary Protective Associations," Benj. Lee, M.D., Secretary of the State Board of Health.

"Sanitary Short Comings of Lewisburg," Dr. W. B. Atkinson, Secretary of Pennsylvania State Medical Society, and Medical Inspector to the State Board of Health.

2 P.M.—"School Hygiene," Dr. G. G. Groff, Member of State Board of Health.

"Household Hygiene," Prof. Frances Emily White, Womens' Medical College, Philadelphia, Pa.

"How Germs cause Disease," Dr. V. C. Vaughan, of Michigan University.

"The Drainage of Lewisburg," M. S. D. Bates, Lewisburg, Pa.

Evening Session.

Illustrated Lecture, on "DOMESTIC HYGIENE." Dr. J. F. Edwards, of the State Board of Health.

Papers are also expected from Dr. J. H. Kennedy, Shamokin, Pa.; Dr. A. Schultz, Superintendent of the State Hospital for the Insane, Danville, Pa., and other well-known scientific men.

It will be observed, that while distinguished sanitarians from a distance will take part in the proceedings, the aim has been to make the latter, to a considerable extent, of practical use to the citizens of Lewisburg and its neighborhood. For this reason they will be of great interest to all residents in small towns and rural districts, the conditions of which are necessarily very similar. The Convention will be presided over by the Hon. S. T. Davis, member of Legislature, of Lancaster, Pa.

A more definite programme will be issued later.

GEORGE G. GROFF, M.D.,
BENJAMIN LEE, M.D., Sec., } Committee.

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Editorial.

HOUSE DRAINAGE.

In every science or system, while there are many factors that go to make up the whole, yet we always have certain prominent features that stand out pre-eminently as of greater or more universal importance than the rest. In the field of hygiene, we find that prominent among these special considerations is the question of "House Drainage." We may have every other precept of hygiene rigidly observed, yet if we fail to have good house drainage, we cannot possibly have good health. If we were asked to name the prime requisite for a healthy life, we would say "Pure Air," and this we cannot have where drainage is not perfect. Granting, as we must, that foul air is a cause of ill health, it requires no medical training for a man to comprehend that a house with faulty plumbing must, of necessity, be an unhealthy house.

Let us clearly understand what we mean by sewer air, about which we hear so much. Strange as it may seem to the sanitarian, who thinks, yet, even among the intelligent classes there is a very vague and illy defined notion of what sewer-gas really is. The fact that the gas or air comes from a sewer has no sanitary significance whatsoever, but the fact that this sewer contains organic matter that is undergoing putrefaction makes all the difference in the world. It is necessary that we should clearly understand the difference between decomposition and putrefaction, for there is a vast difference, and thereby hangs a tale of great sanitary significance. If we deposit dead organic matter on the ground and mix it with the earth, we will have the true process of decomposition inaugurated; the inert organic matter will decompose into its original elements and they will be mixed with the inorganic soil, to be taken therefrom by and to form again into organic matter, which in time will again become a part of the living animal. Thus does organic matter compose and decompose according to Nature's laws, forming a part of the soil, then a component of vegetable life, thence into the animal and back again to the soil from which it came. This is the order of organic matter among the wild beasts who roam the forests, the domestic animals upon our farms, and so it was among aboriginal mankind who lived in accord with Nature. Here we have decomposition pure and simple, a rational, proper and necessary condition of the continued existence of animal and vegetable life. Let us, however, put this same dead organic matter into a china-ware dish without earth or other matter to influence it; we will now have decomposition, it is true, but it will be a putrefactive decomposition, there will be no earth to appropriate the elements of this organic matter as it separates into its original parts, the design of nature is interfered with, and instead of natural, healthy, decomposition, we will have unhealthy putrefaction. It must be accepted as an undoubted sanitary maxim that organic matter from which life has departed for any length of time cannot remain in the vicinity of animal life without proving detrimental to the health of the latter. Upon this very dead and decaying organic matter does vegetable life live and thrive, but it is a veritable poison to animal life. This is a law of Nature and of hygiene that is fixed and immutable, and that cannot be defied without the sure exactment of a dreadful penalty. Man living in a savage state of nature, as the veritable Indians of the far West, will deposit their excrement upon the ground, anywhere and everywhere, as the sheep roaming over the farm, drops the very best of manure here and there, so that they are regarded as great benefactors to the soil, so the natural man returning that to the earth which he hath received from it, and migrating from point to point, (whereby unhealthy accumulations are avoided), living in accordance with natural designs has nothing to fear from "sewer-gas," for he is surrounded not by organic putrefaction, but by healthy, proper, natural organic decomposition. It is when mankind comes to live *unnaturally* in cities, (*unnaturally*, for remember that the design of the Creator of the universe did not contemplate cities, this oversight of his *Omniscience* being kindly supplied by man) that the danger of organic putrefaction must be met and combatted. We realize, even without any hygienic knowledge, that human refuse must be removed from our vicinity, and for this purpose we have a series of pipes and sewers. In these sewers there is no earth to appropriate the organic elements, hence, true decomposition in a sewer is an impossibility, while unhealthy putrefaction is the rule, and it is the gases that result from this putrefaction of organic matter that all city residents are familiar with as sewer gas. This gas may be simply the results of this putrefaction, which is bad enough, or it may have added to it the specific germs of typhoid fever, diphtheria, cholera or some other disease, which have gained an entrance to the sewer by means of the non-disinfected waste from some house wherein one or the other of these diseases may have existed. Now we know what sewer-gas is, and how dangerous to health it must prove. If the air of a sewer gets back into your house it must prove injurious; that it may not do so is the design of good house plumbing. In our next issue we will continue the subject from this point, discussing the effects of sewer-air and the means of combatting its evil influences.

THE EXECUTIVE MANSION AT HARRISBURG.

It will be remembered that about one year ago, we published a report showing a very deplorable state of affairs about the Executive Mansion, at Harrisburg, from a sanitary point of view. We are very glad now to be able to chronicle that the residence of our Chief Executive has been thoroughly overhauled, both within and without. The illustrations (from *Building*), which we elsewhere publish, will show that Pennsylvania has now a Mansion architecturally worthy of its distinguished occupant, while the sanitary necessities have been attended to, as the report of our Secretary bears evidence.

RESIDING IN CELLARS.

It has been ascertained that, free as light and air are, there are over 27,000 families in the city of Paris inhabiting apartments having no other openings than a door, and that at least 60,000 families in the city of London reside in cellars.

Notes and Comments.

SCHOOL AND HEALTH.

FOR PARENTS, GUARDIANS, CHILDREN, TEACHERS AND TRUSTEES.

(Dr. E. M. Hunt, the dtstinguished Secretary of the New Jersey State Board of Health, has issued some most valuable circulars, which we shall take the liberty of reproducing from time to time; this is one of them.)

HEALTH, CHARACTER AND INDUSTRY.

These are the three best things to have all through life.

POWER, SUCCESS AND HAPPINESS

Are their companions. Without health, character may be good, but it has a burden to carry; without health, industry is tied down, or pulls too heavy a load; without health, power, success and happiness have three of their best friends in trouble. Let us then learn all we can about health, *how to have it; how to keep it; what use to make of it*, as we go along with the thirteen years of school life, between five and eighteen years of age.

That is a poor school which takes away one's health; and to keep health is easier than to find it after it is lost.

TO PARENTS OR GUARDIANS.

See to it that the child goes to school in a proper condition. This means first of all, *cleanliness* all over. A child not washed all over at least each week, with warm or cool water, is not fit for school. Some will need a bath oftener. Children need to wash the face and hands, and to comb and brush out the hair at night as well as morning. Let the mouth be rinsed with water, morning and evening, or the teeth be brushed, so as to have a pure breath.

Have clean, thin flannel for *clothing*, next to the skin, with such additional outside garments as may be necessary for warmth, and shoes and stockings that will protect the feet from dampness. A dry pair of socks and a clean handkerchief are not amiss in the satchel. Let no child start for school with damp clothing; when active, we can bear dampness awhile, but to sit in wet clothing is always a risk. Tell the child, if damp or chilly, to let the teacher know it.

A good, plain *unhurried breakfast* is always important to the school child. The young are better off without coffee or tea; but some may need a warm drink for breakfast in cold weather, such as sweetened water, sugar and milk, and water or milk flavored with cocoa. If the child will not be at home and at dinner within five hours after the close of breakfast, have him carry a small and easily-digested lunch to eat at recess, or at an appointed time at school. It should be light bread and butter, with fruit or jelly, and not over-large, if there is to be a meal at home by two o'clock. Have the child chew before swallowing, as it cannot chew after swallowing, as cows do. Let every boy know that *tobacco* in any form is so injurious to growth and vigor as to make its use by him a breach of school law and of good sense.

See that the child gets plenty of good *sleep*, in a well-aired room, and does not go to bed just from the book, so as to be tired and anxious about a lesson.

When the child is really unwell, do not send him to school just for the name of being punctual. The parent should judge and decide wisely, mindful that headache, pain or weariness in a child always requires rest. If your child is sick, or if there is sickness in the family, have the judgment of your doctor as to the time of staying at home.

TO THE CHILD.

You must learn how to take care of your own health. Others may tell you, but experience and advice should early lead you to feel how important it is not to abuse the body. Read this leaflet and mind it. Help your parents and teachers to keep you clean and neat. Be clean in person, in thought, in word, in action. A child that has clean feet, clean hands, clean nails, clean ears, and combed hair, is generally clean and neat.

To get peevish or worried over a lesson is not wholesome. Get, if need be, a part of your lesson at home. The load is often too heavy, because we try to carry too much of it at once, or in too short a time.

In sitting, do not lean over too much or too constantly. While standing, stand erect. Neither fold the arms in front nor put them behind, but let them hang naturally and easily at the sides. *In studying, try to have enough light without a glare;* if light or print troubles you, tell the teacher. If you are really unwell, let him know it; a headache that may not require you to go home may be a reason for change of position, or rest from study; only be *upright*, and do not pretend. In all things seek to take good care of your health, since your happiness and usefulness so much depend upon it.

TO THE TEACHER.

Know that health and habits in reference thereto are important parts of the education you are seeking to conduct. In large schools, a steward or janitor should receive each pupil, and know that the child enters on the work of the day healthy; where no such person is provided, the teacher must include this with many other things in his care-taking.

Children must not hang damp or soiled over-clothing in a close, unaired room, against other damp or wet garments. Each child's clothing should be kept by itself.

The regulation of heating and ventilation is very important; the thermometer should guide you as to heat. 70° F. is a standard. The sensation of those who are well, and who are properly clad, help much to guide as to moisture, warmth and purity of air, draught, etc. Air can often be let in through a sieve of wire, or between the two sashes, with a board strip beneath the lower one, when a direct draught would be hazardous.

Walls often need whitewashing, kalsomining or painting, and all wood-work should be frequently and thoroughly washed. Sweeping carefully under the desks and dusting are important. The condition of the rooms, the distribution of desks according to size of persons, light, variation in study and position, exercise, airing of rooms while empty, moderation of competition, assortment of work to the capacity of the child, and quickness to perceive the occasion for temporary variations and adjustments, are essential in the skilled oversight of the teacher: he must feel that he has this charge to keep. It is a joy to get school-work out of a *well* child, and to help, rather than to complicate inability and invalidism. Remember that the kind of day has something to do with the capacity for work. While light gymnastics should be practiced daily in all schools at stated periods, on rainy or cloudy days special exercises should be given, during which the room can be more thoroughly ventilated. Give zest and advice as to out-of-door as well as to indoor exercises.

Not only talk to the pupils about health, and enforce its rules, but train them in the practice of it, so that "errors in physical conduct or ideas will be as readily pointed out for amendment as mistakes in grammar, pronunciation or behavior." Thus make them *valid*, instead of *invalid;* promote their *wellfare*, instead of their *ill-fare*, and enable them to do their work in life with *ease*, instead of *disease*. Feebleness of constitution or special ailments are too often the result of errors in the school discipline. More suffer and die from the frailties of ill health, thus acquired in childhood, than from diseases which are said to be caught.

WHAT SHALL A TEACHER DO ABOUT CONTAGIOUS DISEASES?

Acquaint parents by this circular, or in some other way, with the fact that *it is their duty not to convey, through their children, contagious diseases to others.* If a child seems unwell, or you find out there is sickness in the house he lives in, inquire as to it. Ask the attending physician or Board of Health to apprise you of any house from which a pupil should not be received. Hold a physician or Board of Health responsible for the time of return to school. In cities, or during epidemics, a permit should be had. Prudence and judgment, but not systems to excite alarm, are required. Small-pox, scarlet fever and diphtheria need special precautions.

TO TRUSTEES OR BOARDS OF EDUCATION.

You are in *trust* of all that relates to the school, having accepted an appointment as a guardian of the children, as well as of the teachers and the property. To you the teachers and the scholars must look for adaptation of structure and furniture, and as the bond between themselves and the community. You must realize that *the care of health is a part of education*, and that this means, on your part, actual personal supervision, appeal and service; it means facilities for right administration as well as buildings. All the larger schools should have direct instruction in physical education.

The trustee must feel it to be his duty and his business to help in giving the child a fair chance for health and usefulness. The state seeks this for itself as well as for the child. No one can do more for it than the school trustees who will wisely look after the welfare of the child in the school, and mold the sentiment of the people in favor of proper arrangements.

Prevalent cleanliness inside of the building, on the grounds, and in all out-houses must be secured; defects must be recognized, both as to their reality and the extent of the evils they cause. *Neat and good housekeeping of the school home is indispensable.* Often it is wise to have the judgment of ladies as to the care of school-rooms. Teachers need to be fully upheld in enforcing rules as to the personal habits of the pupils.

Thus, *health*, *character*, and *industry* keep together as school friends and life friends, and *power*, *success*, and *happiness* join their company. So the public school confers blessings on the people and on the State, securing power not less from sound bodies than from sound minds.

THE INFLUENCE OF EARLY CIRCUMSTANCES ON LONGEVITY.

Before the *British Medical Association* Dr. C. R. Drysdale, of London, read a paper on this subject wherein he said that Villermé, of Paris, was one of the first to show that comfort prolonged life greatly, by showing that between the ages of forty and fifty years persons in good circumstances, in Paris, had a death-rate of 8.3 per 1,000 against one of 18.7 per 1,000 of persons of similar ages among the poor; and he also found that in Paris, between 1817 and 1836, 1 in 15 of the population of the poor arrondissement died annually, against 1 in 65 in the second, or rich, quarter. Mr. Chadwick had shown that in London there were some sub-districts of the wealthy classes where the death-rate not exceed 11.3 per 1,000 annually, did while there were localities (slums) where it rose to 38 per 1,000. In 1843, when the general London death-rate was 24 per 1,000, that gentleman found, in Bethnal Green, that the mean age at death of the gentry and professionals was forty-four years against twenty-two years among the artisan class; and recently when the death rate among the gentry was about 55 in England and Wales, that of the artisan class in Lambeth was 29.5. In 1874, Mr. C. Ansell, of the National Insurance Company, found that only 8 per cent. of the children of the upper classes died in their first year, against nineteen per cent. in the general population of Liverpool, and thirty-three per cent. in the slums of that and other large cities. Ansell had concluded that, whereas there died in England and Wales, in 1874, 368,179 persons under the age of sixty years, if the mortality had been equal to that of the rich, only 226,040 would have died, so that poverty in one year had killed 142,139 persons. Dr. Thouvenin had truly remarked that with the exception of cotton-beating, dividing and carding silk cocoons, white lead, and grinding, there are scarcely any trades necessarily dangerous to life,; but he found that the deaths from consumption were nearly one-fourth of all deaths among the poor, and only, or about, one-eighteenth of all deaths among the rich. Dr. Edward Smith's statistics at the Brompton Consumption Hospital of London, which he had verified at the North London Consumption Hospital, showed that his patients had been the offspring of parents who, on an average, had produced seven children each, and, as such children were ill-fed, they succumbed more easily to that disease. In the wealthy parishes of Kensington, London, with 186,584 inhabitants, Saint-George, Hanover Square (88,176), Hampstead (53,758), St. James, Westminster (28,178), had in 1886, collectively, 7,779 births and 5,614 deaths; *i.e.*, a birth-rate of 21.8 and a death-rate of 16 per 1,000; while the poor parishes of Shoreditch (125,508), Bethnal Green (129,895), Whitechapel (68,345), and St George-in-the-East there was, in 1886, a birth-rate of 38.3 and a death-rate of 24.4 per 1,000. Thus, the poor in London had nearly twice as many children as the rich, and consequently their death-rate was to that of the rich as 3 to 2. The high death-rate of Dublin (26.5) was now explained by Dr. Grimshaw's statistics to be due to poverty, for the richer classes in that city have an annual death-rate of 13.4 per 1,000, against the artisan class, which was 33.7. The percentage of children among the rich in Dublin was seven, and among the poorer classes nearly fifteen, below the age of five years. The low death-rate of the Champs Elyseés, at Paris, as compared with the poor twelfth arrondissement, is understood when we know that in the poor quarter children under five years existed to the amount of 957, against 397 in the rich quarter, per 10,000 inhabitants. In 1887, when he, Dr. Drysdale, was vice-president of one of the sections of hygiene at Paris, he found that 100 medical men in Paris produced only 174 children, whereas the average number of children in the poor quarters of Paris in a family, according to M. Haussonville, was 6, and in Paris he had found 7.20. The great economist, Mr. J. S. Mill, said that "little improvement could be expected in morality until the producing of large families was regarded in the same light as drunkenness," and all enlightened hygienists would re-echo that sentiment. For his, Dr. Drysdale's part, he was convinced that the health of the poorest classes would never be satisfactory until they were prevented, by public opinion, or, better still, by statute law of some kind, from engendering such enormous and unfortunate families. And if he was right in this opinion, what would the section say to the conduct of the Fellows of the Royal College of physicians of Edinburgh, who, in February last, had threatened one of their members, Dr. Henry A. Allbutt, of Leeds, with expulsion from the list of members of the college, because he had explained, in a sixpenny pamphlet to the poor, the simple and harmless methods, now known to all enlightened citizens, whereby they might restrain the number of their children within the powers of their industry to rear them? It was a disgrace to a body of educated men to be so silly and so inhuman, and he sincerely trusted that they had already repented, and would ask the pardon of Dr. Allbutt.

In the discussson which followed the reading of these papers, Dr. Tatham (Salford) said he had no means in Salford of testing Dr. Grimshaw's statistics; but he had divided the population accordsng to the class of houses they inhabited, and his figures tallied well with those of Dr. Grimshaw. One fact astonished him in Salford, and that was that there seemed to be seven times as many cases of scarlet fever among the poor as among the rich in that town. Dr. Grimshaw had grouped several years together in this first attempt; but after this he would give the yearly averages, which would be most useful. In England such a plan was not yet in vogue; but then Dr. Grimshaw was a physician, while the English Registrar-General was only a layman.

Dr. Thorne Thorne asked whether the new statistics would keep up the enumeration of trades.

Dr. Grimshaw said there still existed a house classification; but there were many so-called first-class houses let out in tenements with fourth-class accommodations. Dr. William Farr was the great founder of vital statistics in England. The classification by trades was not interfered with.

A SOLUTION OF THE SEWAGE DIFFICULTY.

Under this title a London engineer writes in the last number of *The Sanitarian*. His plan is to deodorize and precipitate sewage with ferric chloride. This agent he describes as "essentially a chlorinated compound of the higher oxides of iron, and possessing the remarkable property of parting with a portion of its nascent oxygen in the presence of putrid organic matter, or of matters approaching putrescence, and has little chemical effect upon organic compounds in a fresh state."

He claims that this agent is prepared from easily attainable materials, and from the waste products of certain manufactures. It can, therefore, be cheaply produced on the spot where its use may be required. "Having accomplished its work upon the sewage waters or other foul liquids, it then gathers up and reabsorbs oxygen, either from the air dissolved in the fluids or by splitting up water into its elements, for its own reconstruction, in readiness again for further duty, and so on in perpetuity."

In all refuse there are some healthy bacteria which act as scavengers, the so-called "nitrifying" germs. These the newly suggested agent does not destroy. It has a selective affinity upon pathogenic and putrefying organisms. The advantages attending its use are summarized as follows:

1. Prevention of nuisances in the streets and thoroughfares by emission of foul gases and vapors generated within the sewers from putrefaction of sewage.

2. Prevention of nuisance in house-drains and their equipments.

3. Complete oxidation of putrescent organic matters, combined with precipitation of organic matters in solution.

4. Precipitation in the settling tanks by simple subsidence and freedom from offensive smells during the operation.

5. Prevention of secondary decomposition in the sewage sludge, and fixation of nitrogenous compounds, thus securing whatever manurial value the sludge may possess, and avoidance of offensive odors in the process.

6. Arrestment of secondary decomposition in the effluent waters.

7. Economical treatment of sewage, and at less cost than by usual processes, combined with greater efficiency, due to the recuperative action of the fer-chlor.

8. Restraining effect upon disease and putrefactive micro-organisms, but without injury to the harmless and beneficial bacteria.

9. Avoidance of material alterations in the existing arrangements of sewage works, and equal adaptability of the process to towns discharging sewage into the sea or water-courses, or by irrigation of land.

MODERN DIET AND ITS EFFECTS ON HEALTH.

Dr. Boyd says there are some points in connection with this subject which are not of merely professional interest, but of far wider significance, and may be regarded as of national importance also, as they embrace not only our every-day condition of health as individuals, but our very physical existence as a race (*British Medical Journal*). Foremost among these points is the question how many of our modern diseases depend upon our diet, and why dyspepsia and its concomitant troubles are so prevalent. In the consideration of this subject we might reasonably ask how much man's habits and occupation have contributed to the deterioration of his nervous and digestive powers. Where such a preponderance of albuminoids enter into our food, as is at present the case, the additional use of alcohol with them becomes a necessity to aid in their digestion, more especially as from the impaired nervous energy of the present day the digestive organs require the stimulus they give to increase secretion. But is assimilation of a large quantity of albuminoids of benefit to our system at large? Having regard to the fact that the ptomaines of our food are mainly derived from albuminoids, most certainly it cannot be; and in this meat eating country, where, from climatic influences, rheumatism and its congeners are endemic, a great liability to cardiac affections necessarily ensues. As most of the albuminoid waste passes through the kidneys, have we not a direct connection between our food and the prevalence of Bright's disease? The prevailing taste includes a large amount of animal food, and the present state of the laws allows too great facilities for all sections of society to poison themselves with this form of food. The State regulates the sale and the quality of the alcohol the public consumes, but exercises no control over the quality of the meat its people use. It is very doubtful if the opportunity to purchase meat cheaply and use it in abundance is an advantage, looking at the matter from a public health point of view. It may be said that it is not the abundant use of meat, but the manner of cooking it that is injurious. Granted that this is so, has not the State a greater reason to attend to the wants of its people in this respect? Schools of cooking would seem, then, of paramount importance, to enable the poor to receive that instruction which is so essential to their moral and physical welfare.

Summary of Mortality of the State of New York, for the Year 1887, as Published in the Monthly Bulletin.

TOTALS OF MORTALITY OF THE STATE BY MONTHS.

	Total number of deaths.	Deaths under five years.	Per cent. of deaths under 5 years to total deaths.	Cerebro Spinal Fever.	Typhus Fever.	Typhoid Fever.	Malarial Diseases	Small Pox.	Scarlet Fever.	Measles.	Erysipelas.	Whooping Cough.	Croup and Diphtheria.	Diarrhœal Diseases.	Zymotic deaths per 1000 deaths from all causes.	Acute Respiratory Diseases.	Cousumption.	Puerperal Diseases.
JANUARY	7671	2822	36.8	61	..	72	65	21	101	347	30	67	406	78	162.91	1451	1057	72
FEBRUARY	6653	2439	36.8	39	..	57	46	21	79	239	28	39	423	87	159.00	1141	952	86
MARCH	7830	2551	32.5	42	..	72	54	24	98	152	42	48	497	624	211.11	1203	664	103
APRIL	7967	2443	30.6	56	1	56	75	12	112	111	45	30	479	112	136.20	1341	1146	100
MAY	7528	2457	32.6	52	..	37	66	42	114	96	41	27	540	142	153.85	1098	1052	71
JUNE	7484	2020	40.0	57	..	54	67	7	109	65	26	30	475	887	240.00	587	948	56
JULY	11463	6049	52.7	51	..	102	61	12	69	66	15	48	375	3669	389.68	477	956	90
AUGUST	9042	4130	45.3	41	..	194	98	6	55	24	16	57	302	2158	383.30	457	926	67
SEPTEMBER	8267	3218	39.0	38	..	248	141	10	83	16	11	44	559	1009	261.15	697	980	45
OCTOBER	7370	2317	31.3	38	..	182	104	4	113	15	13	14	707	297	201.63	853	942	53
NOVEMBER	7292	2171	29.7	29	..	149	80	4	130	30	25	22	844	117	200.00	1041	964	67
DECEMBER	7886	2497	31.6	36	..	101	78	12	204	44	35	21	885	78	190.00	1205	1022	75
TOTALS for first six months	45133	15732	34.8	307	1	348	373	127	613	1010	212	241	2820	1930	177.30	6827	5819	488
TOTALS for last six months	51320	19382	38.8	233	..	979	562	48	654	195	115	206	3670	7328	280.00	4730	5790	397
TOTALS for the year	96453	35114	36.3	540	1	1327	935		1267	1205	327	447	6490	9258	227.80	11557	11609	885

	Diseases of Digestive System (not Diarrhœal).	Diseases of Urinary System.	Diseases of Circulatory System.	Diseases of Nervous System.	Cancer.	Accidents and Violence.	Old Age.	Unclassified.
JANUARY	361	365	453	754	178	224	693	812
FEBRUARY	348	357	443	686	149	204	643	583
MARCH	367	377	535	839	197	260	775	857
APRIL	434	432	512	844	207	282	833	747
MAY	379	378	445	870	191	359	714	814
JUNE	516	404	458	784	190	362	597	805
JULY	738	406	429	1259	227	499	729	1185
AUGUST	665	361	442	933	199	354	731	956
SEPTEMBER	522	352	503	722	232	331	765	959
OCTOBER	458	367	475	759	207	309	717	743
NOVEMBER	370	375	499	709	178	301	718	640
DECEMBER	441	408	543	798	208	295	761	636
TOTALS for first six months	2405	2313	2846	4777	1112	1691	4255	4618
TOTALS for last six months	3194	2269	2891	5180	1251	2089	4421	5118
TOTALS for the year	5599	4582	5737	9957	2363	3780	8676	9736

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THE JOURNAL OF COMPARATIVE MEDICINE AND SURGERY.

This is the title of a very interesting and valuable quarterly published by Dr. Hummel, of Philadelphia, and edited by William A. Conklin, Ph. D., D. V. S., the well-known and able director of the Zoological Gardens, Central Park, N. Y., and Professor Rush S. Huidekoper, M. D., Dean of Veterinary Department, University of Pennsylvania. It is the only journal published on the American continent devoted to comparative medicine and surgery, and that it fills this field with signal ability is attested by its rapidly growing list of subscribers, not only here, but also abroad. It is in the 9th year of its existence, and has been singularly fortunate throughout in having had at its command editorial talent of the very highest character. It is only necessary to mention such eminent names as Dr. E. C. Spitzka, Dr. Alexander Hadden, Dr. C. L. Dana, Dr. W. H. Porter, and F. S. Billings.

Among the contributors are: John Bland Sutton, M.D., of Middlesex Hospital, London; Joseph Leidy, of the University of Pennsylvania; T. Wesley Mills, of McGill College, Montreal; Dr. R. W. Burke, of India; Thomas Wallen, director of the Edinburgh, Scotland, Veterinary College; Harrison Allen, of Philadelphia; Henry C. Chapman, of Philadelphia; R. W. Schufeldt, U. S. A.; E. O. Shakespeare, M.D., of Philadelphia, who has become famous in connection with his researches regarding the so-called cholera bacillus; Wm. Osler, M.D.; C. M. O'Leary, M.D., L.L.D.; A. W. Clement, V. S., of the Bureau of Animal Industry, department of agriculture.

The branch of medicine which this journal represents is more far-reaching than one might suppose. The physicians who are inquiring into the causes of disease cannot rudely overlook those which affect animals, and of which they both sicken and die. Our sanitarians for the most part, up to this time, have been with their dim lanterns vainly looking for all causes of disease among the decomposing heaps of vegetable matter, into vaults, drain pipes and sewers with expectations of finding them in the poisonous gases, but all the while overlooking the pet cat or dog which might be a veritable carrier of the causes, or the good family cow, which might be infusing into the vitals of human beings a wasting and deadly ailment.

A POSSIBLE CARRIER OF CONTAGION.

Dr. D. Lichty, of Rockford, Ill., writes to the *Medical Record*, March 3, 1888, that in an active and extended experience of twelve years in country practice, he has observed that it is the custom among the farmers especially the younger families or beginners, to make butter in the house in larger or smaller quantities; and in winter-time, to prevent the milk from freezing, it is usually kept in the kitchen, which is also the living-room, and often the only place in the house where a constant fire is kept. In this room the cônvalescents stay, and to it are often carried the sick, whatever may be the nature of their illness, whether diphtheria, scarlet fever, or what not, because it is probably the only room where an attempt at equable temperature would be successful. Here the milk from which butter is made is kept in large shallow pans, sometimes an open, temporary shelving, but more frequently in "safes"—a light wood cupboard with wire gauze or perforated tin panels at the ends, and folding-doors of the same material. Now there is nothing in this, he says to prevent the exhalations, desquamations, or disease-germs from being absorbed—and nothing possesses absorbent properties more than fresh milk. Or it may only fall on the surface of the milk, from which it, with the cream, is carefully skimmed, until sufficient is gathered for churning, when it is made into butter, packed and carried to its home market, from thence to anywhere and everywhere, without ever having been subjected to any influences, either thermal or chemical, to destroy or impair organic life.

Dr. Lichty has also seen the mother, who was the housekeeper and only nurse, leave a large wooden bowl full of butter, in which her hands and arms had been immersed nearly to the elbows, and follow him through two adjoining rooms, in which her children were sick with scarlet fever, to give him the history of their illness the night previous, receive directions and instructions, and then return to her butter packing without stopping to wash her hands. And this butter was bought by local dealers, shipped to city markets, where well watched and carefully isolated innocents developed those mysterious *de novo* cases of scarlet fever.

OUR WORN-OUT YOUNG MEN.

The following is from the *Atlanta Constitution:*

"The other day one of the world's greatest rulers died at the age of ninety-one. His life had been a stormy one. He was rocked in the cradle of war. His boyhood was passed in camps and on battlefields. He was at Waterloo, and also at Sedan, witnessing with the serene consciousness of power the crushing defeat of the First Napoleon, and the complete annihilation of his successor. Yet, with all the cares of empire resting upon his shoulders, this man survived three generations of his contemporaries.

"On the day of William's death the General Manager of the Union Pacific Railway died at the age of forty-eight. He was not the victim of any disease. He was killed by overwork. Before he was twenty-one he was a rising railroad man. His friends say that he never took a rest. He was untiring, and delighted in hard work, and this is the end of it all. At an age when he should have been fitted for his best work, he was so utterly worn out that the thread of life suddenly snapped asunder, and he fell by the wayside.

"These two cases are not exceptional. In Europe men of four score and over hold their own with younger men. In this country it is a common thing to find men yielding to the strain of overwork at the age of fifty. We do not find such examples in other countries. Brougham was an active man at ninety, and Wellington was a power when he was eighty-three. Gladstone, at the age of seventy-nine, is the head and front of a great reform movement. Kossuth, at eighty-six, is in vigorous health, and Chevreul, who is now one hundred and one, is still making chemical experiments. But this country is the land of old-young men. Dyspepsia, paralysis, and Bright's disease stalk behind our youngsters, our boys who are gray-haired at thirty, and ready to die or lose their grip at fifty.

"It is very strange. We are wonderfully learned in all that pertains to diet. Nowhere in the world do people make such an outcry against liquor, tobacco, and everything that is said to be injurious to the health. Even in our schools little boys and girls are taught the principles of hygiene. What is the result? Our newspapers are filled with advertisements of nerve tonics, brain foods, and all sorts of invigorators for our nation of physical and mental wrecks.

"Is it our climate, or diet, or our overwork? Perhaps it is all due to hurry, flurry, and worry. We despise small things, and everybody is trying to make a fortune at one lick. Our young men try to leap to the top-most round of the ladder, instead of climbing. Every man wants to dictate, lead and boss the job. The man who starts with nothing and makes a million dollars, throws up the sponge and retires from the business arena bitterly disappointed because he failed to make ten millions.

"Now our European cousins have a way of making haste slowly. They do not exhaust all their mental and physical capital in a succession of mad leaps. They believe in plodding, but they like to take "a day off" occasionally, and they are all the fresher and stronger for it. They don't know as much as we do about the laws of health, but they manage to enjoy life. It will not do to sneer at the men and the ways of the Old World. It would be wiser to imitate them in some respects."

The *Atlanta Constitution* gives most excellent advice, but it is in error when it says that Europeans do not know as much as we do about the laws of healt h In England and Germany the popular knowledge of and interest in hygiene is much greater than in this country, though, (let it be recorded with gratification) we are rapidly forging to the front in this direction.

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THE PROGRESS OF PREVENTIVE MEDICINE.

The *Medical Register* says: "In the present improved state of sanitary discipline, it is difficult to realize the miserable conditions which environed the physician not more than fifty years ago. It was not until 1836 that the registration of causes of death was instituted, whereby statistics, immensely valuable in studying the causes of disease, have since been obtained. We can better understand the difficulties with which our grandfather physicians had to cope when we know that, besides the comparately undeveloped state of medical science, they had almost no means of ascertaining the influence of disease on age and sex, according to condition of life, locality, etc., etc. Once the law requiring civil registration of the causes of death became established, it was possible to study diseases with a view to their prevention as well as cure. Small-pox and scarlet fever were first considered, and it was found that the new statistics showed a general mortality of the towns and cities that was forty-four per cent. greater than in the country. This circumstance at once suggested the possibility of a partial remedy. In 1840, public vaccination was established as the result, in part, of these investigations, and the effect was a reduction in the rates of mortality from 57.2 per 100,000 living in 1838–42 to 14.4 for the years 1865–69. This achievement is monumental; but the preventive treatment of small-pox was not yet perfect, as was shown by the renewed virulence of the disease in 1870–74, during the Franco-Prussian war, when the death-rate rose to 42.7 in 100,000. Public faith in vaccination was somewhat shaken at that time, but Dr. Buchanan, brought to light the now well-established facts that vaccination is most potent when recent. Acting upon this principle, the death-rate from small-pox was again reduced, this time below any figures ever before attained—*i. e.*, 6.5 per cent. per 100,000 in 1880–84.

"A similar result has been attained in the prevention of fevers. Infected dwellings have been demolished and sanitary reforms instituted in fever-breeding districts. The poor have been, so far as possible, educated to more hygienic modes of living, though this result is as yet but imperfectly attained. What has been done, however, has reduced the number of cases of typhus fever admitted annually in the London hospitals from 2000, twenty years ago, to only a few dozen at the present time. Similar successes have been reported elsewhere. The discovery of the means of propagating and conveying the typhoid fever germ have, from the consequent avoidance of pernicious practices, reduced the death-rate from 3.9 to 1.7 per cent. alone. In England, the value of these preventive measures is so well recognized that £8, 000,000 are expended annually upon sanitary precautions against typhoid fever and allied diseases. A better knowledge of scarlet fever, diphtheria, phthisis, and cholera has greatly reduced the prevalence of all these diseases. Latterly, the study of the diseases of animals in their relation to man has brought about some important revelations which may ultimately lead to one of the most effectual preventive methods at our command. The physician should be as enthusiastic and persistent in his study of this branch of medical science as he is in his ordinary practice of curing disease after it has been contracted. To prevent it altogether is a much more brilliant and noble achievement than the most clever treatment which the brain of genius ever evolved."

THE RISE OF THE GIPSY.

Edgar L. Wakeman, whose life among, and close study of, the *Romany* entitles him to be ranked as highest authority upon Gipsies (says the *New York World*), furnishes, from time time, many interesting facts in regard to their progress in this country. He states that in Chicago there is a clergyman who was born a Gipsy. A member of the Pennsylvania Legislature has the same origin. In Canada there are fifty eminent professional people who are of the Bohemian race. A prominent civil engineer on a Southern railway is a Gipsy. Mr. Wakeman says that in New York City are half a hundred Gipsies, several of whom are worth upward of $100,000 apiece. A Boston lawyer in good practice is a Gipsy. A San Francisco café is owned and conducted by a Gipsy, who is very rich. In Indianapolis is a physician in large practice, who passes as an Englishman. He was born in a Yetholm Gipsy camp. One of the wealthiest residents of Washington is a Gipsy. Certain business men in Richmond and Baltimore have the same origin. Henry Stanley, of St. Paul, owns property worth over $40,000. The Cooper family, of East Somerville, Boston, are worth $250,000. Uriah Wharton owns $200,000 of real-estate in New York. In Canada, the amount of property held by Gipsies is very large. Half a million dollars' worth of property in and near Dayton, Ohio, is owned by Gipsies. In Milwaukee, Elias Brewer owns $50,000 worth of property. "In short," says Mr. Wakeman, "I make it as a statement of fact that I could fill columns with names and addresses and property estimates of nearly a thousand Gipsies in this country whose combined wealth would exceed $40,000,000."

Thus is it that the Gipsies have become an interesting race to the student of sociology. Their advancement and prosperity are not suppositious. The Gipsies are becoming in reality an important part of the community. As Mr. Wakeman hints, some day the busy politician will be scurrying about to catch the Gipsy vote. We have, therefore, requested Mr. Wakeman to prepare for us an article on "GIPSY HYGIENE." This he has kindly consented to do, and the article will appear sometime during the present year.

THE RELATION OF TEA-DRINKING TO NERVOUS DISORDERS.

A paper on this subject, from the pen of Dr. W. N. Bullard, appears in the "Medical Communications of the Massachusetts Medical Society." The author has reached the following conclusions: 1. Chronic tea-poisoning produces a condition of irritability or hyperexcitability of the nervous system, and does this both directly by the action of the tea upon the nervous system, and indirectly by the production of gastric derangement. 2. Tea, taken frequently and in moderate doses for a considerable period of time, tends therefore to place the nervous system in a condition in which it is more easily affected injuriously by slight external influences. It therefore favors the production of many forms of functional neuroses, and, if such neuroses already exist, aids in their continuance. 3. There is no evidence that tea taken in the manner described causes any organic nervous lesion, but it is probable that if such nervous lesion should exist, tea thus taken might tend to cause an aggravation and continuance of certain symptoms. 4. There is no evidence that chronic tea-poisoning produces unaided any serious functional neuroses in persons not in any way specially predisposed thereto. It does, however, in the manner above described, act as an important factor in the production of neuralgia, hysteria, and allied affections. 5. When taken constantly in very large doses, dyspeptic symptoms usually intervene before irreparable harm is done to the nervous system. 6. In hemicrania, and possibly some other functional neuroses, there is probably a craving on the part of the nervous system for a slight stimulation, which is better afforded by tea than by any other equally accessible article, and for this reason patients with hemicrania are so frequently tea-drinkers.

ON PLACARDING INFECTED HOUSES.

One admirable feature of our new law (says the *Sanitary Inspector*, of Maine), is the provision for signifying to the public the premises where cases of the infectious diseases exist. The law empowers the local board of health and makes it its duty "to give public notice of infected places, by displaying red flags or by posting placards on the entrances of the premises." For obvious reasons the householder of average sensibility would dislike to have the red flag flaunted from his door, but no sensible person will be likely to object to having the public warned by the posting of a placard of the modest dimensions of five and one-half by three and one-half inches upon the entrances of his premises. A placard of this description has been sent to the local boards by the State Board and has been quite generally used when the contagious diseases have appeared. The following represents one of these cards in miniature:

— NOTICE —

—oo—

This house contains a case of

DIPHTHERIA.

When the danger from contagion has passed this card will be removed.

Per Order,

BOARD OF HEALTH.

—oo—

Any person removing this Card without authority is liable to a fine of Fifty Dollars.

As far as is known there has been no objection made by the householders against the use of this system of placarding. In fact many of them appreciate the advantage of being relieved of the necessity of warning each individual who approaches the house, and of being able to throw the responsibility upon the board of health of shutting the door against their careless neighbors.

BALDNESS; WHAT CAN WE DO FOR IT?

The above was the title of a paper read by Dr. G. T. Jackson before the Medical Society of the County of New York at a recent meeting (says *Gaillard's Journal*). Premature baldness, it might be said in a general way, was that occurring before the forty-fifth year, although the period was arbitrary. Subdivisions were made into idiopathic and symptomatic. The idiopathic form began unannounced by any antecedent disease. Many families had it for generations. The different causes alleged for it were named, but the author gave particular attention to the influence exerted by want of proper care of the hair, as this was under the control of the patient, and was a part of prophylaxis and treatment. He was inclined to think that due attention to proper care of the scalp and general hygiene of the body were more reliable than any so-called remedies. Women gave more care to their scalps, and not only was baldness less common among them than among men, but the results of treatment were better. In families in which baldness was hereditary, prophylaxis should commence at birth with proper cleansing of the scalp, the use of soap and water, the brush and comb, and the avoidance of all things which might injure the scalp. The shampoo need not be repeated more than once or twice a week, and, after drying, some unguent, such as sweet oil, should be applied. What not to do was nearly as important as what to do. Pomades, as they were liable to become rancid and injure the scalp, should not be used. Wetting, twisting, pulling, and scorching the hair, as fashion demanded, were injurious. Close-fitting hats and caps should not be worn. Anxiety of mind should be combated by cultivating a cheerful disposition.

HOW TO PREVENT THE SPREAD OF INFECTION.

An English health officer has formulated the following suggestions (says the *Sanitary News*): It is supposed that a case has developed in a family, and that the patient is not to be removed from his home. The first requisite is to prepare a room in which the patient may be isolated. It should be cleared of all furniture which is not absolutely required, and the floor should be cleansed and left bare. The room should be regarded as a source of danger, and should be cut off from the rest of the house by means of a sheet, or sheets, wrung out with a disinfectant solution and kept moist therewith, suspended outside each door, and reaching to the floor. Everything taken into that room should be regarded as infected, and nothing should be removed without disinfection. Towels, pocket-handkerchiefs, soiled linen, etc., used in the room, should be boiled in a disinfectant solution. The patient should be washed with a disinfectant solution and soap and water, and in scarlet fever the body should be anointed with oil. An open fire should be kept in the room (winter and summer), and if no ventilation is provided in the house-construction, a window should always be left open a little. Dogs, cats, and other pets should be excluded from the room, as they carry infection readily. In case the patient should be so unfortunate as to die, the body should at once be swathed in disinfectant cloths, and should be sealed in a metal coffin before being removed from the room. When the room is no longer required by the patient it should be thoroughly disinfected. It should then be left open, to air thoroughly for a week. All its contents should then be washed, and all suspected articles, such as toys, should be burned.

HYGIENE OF ELECTRIC LIGHTING.

ITS SUPERIORITY OVER GAS DEMONSTRATED IN A MUNICH THEATRE.

Dr. Fr. Renk, assistant to Professor Pettenkofer, has had the opportunity of making a series of experiments on the utility of the electric light from the sanitary stand-point in the "National Theatre" of Munich, which is supplied with 1,700 Edison lights. He has thus been able to prove that the electric light had hardly any influence on the deterioration of the air, whereas the gas-light raised the temperature of the room, deprived the air of its oxygen and rendered it injurious by increasing the carbonic acid, especially in the higher regions. It could also be easily imagined that the elevation of temperature produced by the gas-light, the increase of the carbonic acid and the diminution of the oxygen in the air reached a much higher degree in confined working rooms than in a spacious, well-ventilated theatre. Considering that when the electric light was used such an increase of the local temperature could never take place as when gas-light was employed, and that in the latter case headaches referred to those parts of the head which were directly exposed to the influence of the rays of light, neuralgias and local hyperæmias supervened; furthermore, that no carbonic acid was devoloped, and that no oxygen was consumed by the electric light, and lastly, that although the electric light was very powerful its intensity could be diminished by shades—it became evident that the more general adoption of the electric light would be very advantageous from the hygienic point of view.

MILK AND MEAT.

A correspondent sends us the following clipping and asks for an opinion thereon.

"Hebrews rigidly abstain from taking milk when eating meat. A writer in a well-known New York Hebrew journal says: "I took the same fibre of meat and immersed it in a glass of milk, when instantaneously the fibre of meat was swimming, and the whole glass of milk teeming with myriads of animalculæ. Any medical gentleman will tell you that a glass of milk taken after a diet of meat produces what are commonly known as yeast germs, and that a compliance with the dieting laws of the Hebrews is not alone productive of good health but tends to ward off infectious diseases."

We sent this clipping to Dr. Ephraim Cutter of New York City, an authority on dietetics, and we append his reply.

Remarks. I put at my supper table some fibre of mutton into milk and let it rest. After supper, under the microscope the milk showed its own healthy morphology and nothing else.

Animalculæ do not occur in healthy milk. If milk is watered from a hydrant they may be seen. Milk has its own lactic acid, alcohol and vinegar yeast. Milk has vegetations which, when animalized, produce diseases, as chicken-pox from human milk, or kine-pox from cows' milk; but these are ærial growths, not stomachic.

The quotation has little reference to Hebrew. We have lots of benefits from the Jews which we acknowledge, but the writer of the quotation draws on his imagination and not facts.

CREMATION IN SWITZERLAND.

The *N. Y. Med. Jour.* tells us that the Cremation Society at Zurich, Switzerland, one of the best organized associations in the world, has adopted the Bourry system, which is described as follows: Like Siemens, M. Bourry allows only heated air to communicate with the body. In both systems the corpse burns directly; no flame is to be seen singeing the body, but it burns itself by the abundance of hot oxygen which surrounds it. Bourry uses carbonic acid gas, prepared in a coke regenerator, for heating the crematorium. During the process of cremation he uses mainly chimney gases for heating the air before it touches the corpse, which allows a more economical use of the heat. It is of great advantage that the chimney should be thirty-five feet high from the base of the cellar, so that it is fully covered up by the building. The ashes fall, without being touched, by an almost automatically working apparatus, into the urn. The dissolution of the body does not take place in the dark, unseen and uncontrolled, but the whole action is clear and open. Bourry and Venini place the crematorium, which has the shape of a sarcophagus, and which can be approached from all sides, in the midst of the hall in which the service is to take place. There is a little window on the back of the sarcophagus, through which one can see the process of cremation, which is completed within one to one and one-half hours, without smell or smoke. The process is solemn and beautiful, and avoids every unæsthetic manipulation.

APPARENT ILLUSTRATIONS OF THE CONTAGIOUSNESS OF CANCER.

Dr. Richard Budd contributes to *The Lancet* the following: "Some years ago a gentleman who had spent many years in India came under my care for cancer of the lip, for which he refused to submit to any operation. When he was confined to his bed a favorite little terrier was scarcely ever out of his room, and, as is the habit of such little dogs, frequently licked his master's lips. This dog died before his master, of cancer of the tongue. 2. A lady suffering from cancer of the uterus and vagina was nursed by a strong, healthy young woman of nineteen. She, in spite of my remonstrances, persisted in washing the rags which were saturated with the discharges from her mistress' wounds. Six months after the death of the lady this young woman was admitted into the North Devon Infirmary with a large mass of cancer in the axilla, and speedily died of the disease. 3. Since I have been in practice in this small town, five surgeons, all of whom had officiated at the North Devon Infirmary, have died of cancer. Such a mortality can hardly be conceived, except on the supposition that the disease was communicated, at least to some of them, during their manipulations on patients suffering from cancer. Dr. A. H. Clemon cites the case of a man who died from cancer of the penis, his wife having previously died of cancer of the womb.

PROGRESS IN SANITARY LEGISLATION IN 1887.

In Vermont, a State Board of Health has been organized. In Wisconsin, the powers of the State Board have been extended and its relations to local boards more clearly defined. In Alabama, a special quarantine fund has been appropriated. In Michigan, a laboratory of hygiene has been established in connection with the University of Michigan. In Ontario, the provincial board has power to act as a local board in the absence of such an organization, and in emergencies. In New Jersey, laws have been passed creating a *per capita* tax for health purposes. In West Virginia, laws have been passed extending quarantine to cattle, making county boards of health less medical, licensing medical practitioners, and establishing a system of vital statistics. In Illinois, a law permitting cities to maintain abattoirs has been declared constitutional. In Kentucky, efforts are being made to secure a law prohibiting adulteration of food. In California, a special quarantine fund of $25,000 was created. In New Hampshire, health authorities have been given power over slaughtering and rendering establishments, permitting them to close polluted wells, and to close up dwellings in bad sanitary condition. Physicians must report all cases of scarlet fever and diphtheria to the local board of health.—*Sanitary News*.

THE DISPOSITION OF DEAD BODIES.

The question of the proper disposition

of the dead is so fast growing to be more than a mere question of speculative interest even in the more thickly settled communities of this country (says the *Providence Journal*), that it is hardly strange that the attention of inventors should be called in this direction. The latest proposal of this sort comes from Washington, where is offered a suggestion which, if it meets in practice the promise made for it, may be regarded as removing some of the most strenuous objections alike to earth burial and cremation. The promise is to place the dead in little hermetically sealed cells within a mausoleum, and to connect these cells with a distant furnace by means of tubes, through which a strong pressure of air is maintained, the result being the thorough drying of the body and its perpetual preservation. How practical this may be remains to be seen. It at least may be mentioned—in connection with the current announcement—that there are now a score of cremation societies organized in as many cities of the country—as being an indication of the force and direction of public thought concerning the matter of sepulture.

THE BEST WISH.

[*From the Atlanta Southern Cultivator.*]

Five little girls were spending a pleasant evening together, and fell to discussing what they would most like to have. "I wish I lived in a beautiful palace, with nothing to do but act as I pleased," said little Susie Blake. "Oh, I wish I was very, very pretty, so that people would look at me and say, "She's the prettiest girl I ever saw!" exclaimed Ella Dudley. "And I do wish more than anything else that I had lots and lots of money," said Dora Kyle. "I would like to be very smart and write beautiful story books," said Maggie Wilkins. "Your turn now, Katie—what do you wish for?" asked Maggie, seeing that Katie hesitated. "I wish to be good—so good," she said slowly, "that all my friends will love me very dearly, and miss me when I am absent from them," timidly said little Katie Oatis. "Why Katie!" exclaimed four loving voices, "you have your wish already; for only this morning we all agreed that the day would not be half so pleasant if you had not come," said Maggie, drawing Katie's hand in her own.

CARDINAL GIBBONS AS A SANITARIAN.

By nature, Cardinal Gibbons has not been endowed with a very robust physique. He is a small man, and his health, though good, is kept so by care, without which his life would not be a good risk for insurance companies. The Cardinal is an early riser, celebrating the sacrifice of the Mass at six o'clock every morning, summer and winter. He occupies one hour of each day in the recitation of his "Office," and, while doing so, is constantly walking in the open air. He dines with his clergy, when mirth and good humor prevail, for his eminence rightly appreciates the importance of serenity of mind as an aid to digestion. He is a great pedestrian, seldom rides in a carriage or street-car, and indulges daily in a long, brisk walk. His life is of the simplest, and, in so far as it is closely in accord with nature, has enabled this man, who is so wonderfully endowed mentally, to overcome the obstacles of a weakly body, and to give full development to those mental faculties which, in a less well-regulated life, would have been long since eclipsed in the downfall of its weakly tenement of clay.

WINTER MALARIA.

In his January report to the Secretary of the Connecticut State Board of Health, Dr. R. M. Griswold, of Manchester, says:

"I have noted cases of typical malaria all through the winter. In those persons confined to the house most of the time, the severe cold of the past two weeks has had apparently little effect in subduing it, and I am noting fresh cases every few days among old people and children who are but little out of doors, showing conclusively to my mind that the germs of the disease are housed and lodged alongside of us, and that the most of our houses, which are constantly warmed, do not reach a temperature low enough to insure their destruction. In no other way can I account for the fact that in those people having malaria during the summer and fall, those whose occupations keep them out of doors are relieved of it with the coming of severe cold weather, while those who are mostly confined to the house continue to suffer from it.

RELATIVE LONGEVITY OF AMERICANS AND ENGLISH.

According to the *Medical Record*, Americans of the middle and upper classes, *i. e.*, those who can afford to get their lives insured, are healthier and longer lived than Englishmen. Such is the result arrived at from a study of the life insurance statistics of both countries covering the period of years since 1874. At twenty the expectation of life of American males is 42.1 years; of English males, 41.1; of American females it is 40.8 years, which is precisely the same as that for English women. After the age of twenty, the expectation of life among American women slightly exceeds that of English women up to the age of forty-seven. After the age of thirty-five the expectation of life of English women is better than that of Englishmen, but in America women have 60.0 lower expectation rate than men.

SAND BAG FOR THE SICK ROOM.

One of the most convenient articles to be used in a sick room is a sand bag. Get some clean, fine sand; dry it thoroughly in a kettle on the stove. Make a bag about eight inches square, of flannel, fill it with the dry sand, sew the opening carefully together, and cover the bag with cotton or linen. This will prevent the sand from sifting out, and will also enable you to heat the bag quickly by placing it in the oven or even on top of the stove. After once using this, you will never again attempt to warm the feet or hands of a sick person with a bottle of hot water or a brick. The sand holds the heat a long time, and the bag can be tucked up to the back without hurting the invalid. It is a good plan to make two or three of the bags, and keep them on hand, ready for use at any time when needed.

THE OLD WOMAN OF MADRID.

"Madrid boasts of a woman one hundred and nine years old, with a daughter aged sixty, whom she takes out to walk every day, leading her by the hand. All of her life she has been a washerwoman, and only two years ago she went with the rest of her craft to wash a basketful of linen at the river's edge. The astonishing thing is that she has always lived in one of the dirtiest streets in the city—a very dirty street in a Spanish city is a terror—and the sanitary experts are consequently in great despair at the failure of their theories." There is nothing astonishing about this, when we remember that "custom breeds tolerance."

CHROME YELLOW BAKERS CONVICTED.

Our readers will remember that during last summer we reported that several bakers in this city had been detected using chrome yellow, instead of eggs, as a coloring for their pastry, and that a number of deaths had resulted therefrom. We are now able to report that three of these men have been convicted; one sentenced to nine months, another to six months in prison, while the third receives a sentence of one year, coupled with a fine of one hundred dollars and an expression of regret from the Judge that the law did not permit him to impose a heavier sentence.

PHILADELPHIA SPACE ASSOCIATION.

A number of gentlemen and ladies, appreciating the recent action of Councils in relation to small parks, recently met at the residence of Dr Lundy, on Rittenhouse Square. On motion Mr. Herbert Welsh acted as chairman, and Dr. Fisher secretary. Addresses were made by Dr. Pepper, Dr. Anders, Mr. J. H. Morris, Mr. J. Dundas Lippincott and others present, and it was unanimously agreed to form an association to aid in establishing open spaces throughout the city. The "Philadelphia Space Association" is to be the title of the society.

FORD'S PEPSIN.

When a man offers to give free samples of any goods that he is offering for sale, we are always inclined to think that there must be merit in the article, for he would be a foolish man who would try to introduce inferior goods by giving away samples. Great claims are being made for Ford's Pepsin, and the manufacturers will send free, to any subscriber to this journal, a sample that he may test these claims. Write to the New York & Chicago Chemical Co, New York City, mentioning this journal, and ask for a sample.

CROTON WATER.

The *Medical Bulletin* is our authority for stating that the New York Health Board have been investigating a charge that druggists in that city had been selling filtered Croton water as distilled water. Of more than a hundred samples of "distilled water" purchased at as many drug stores, the chemist of the department found that two only were free from mineral or organic matter. The druggists at fault have been threatened with prosecution if the offence was repeated.

THE SANITARY CONDITIONS AND NECESSITIES OF SCHOOL-HOUSES AND SCHOOL LIFE.

Dr. D. F. Lincoln has prepared a most valuable essay on this subject, for which he received the Lomb prize of the American Public Health Association. This essay is so extremely valuable, that we have decided to reprint it during the coming year, publishing a few pages in each issue of The Annals. It will be commenced in the next issue.

A TEMPERANCE ARGUMENT.

One of the largest and oldest British Life Insurance Companies, which has kept separate registers for twenty years, declares that, among the strictly abstaining class, the real mortality has fallen short by 30 per cent. of the ordinary expectancy, while fully 99 per cent. of moderate drinkers have attained this expectancy.

NO MORE DISEASED HOGS FROM DENMARK.

Owing to the prevalence of a disease of an epidemic character which has attacked hogs in Denmark, the Government of Norway and Sweden has established a quarantine against the importation of Danish hog products. The Treasury Department has been informed that being thus deprived of their principal market, Danish hog raisers will endeavor to find a market in the United States, and the department has taken steps to prevent the importation of diseased hogs from Denmark.

COLUMBIA BLOCK CALENDAR.

The Pope M'f'g. Co., of Boston, the manufacturers of the Columbia bicycles and tricycles and of the Columbia block calendar and stand, wish to state that they regret very much that the exhaustion of their 1888 edition of calendars has made it impossible to favor a large proportion of the readers of the ANNALS OF HYGIENE who have requested a calendar sent them.

STATE SANITARY CONVENTION.

Hon. S. T. Davis, M.D., of Lancaster will preside over the deliberations of the State Sanitary Convention to be held at Lewisburg, May 17 and 18, and he will deliver the annual address, on the "NECESSITY OF A THOROUGH SANITARY ORGANIZATION OF THE STATE."

TO AVOID CHILLS.

Lecturers and others whose occupation forces them to sleep in strange beds will do well to imitate Wendell Phillips, who, in the winter, always carried a big woolen bag, into which, on going to bed, he got feet first, and then tied the bag around his neck. He said that this was the only way to avoid getting a fatal chill between the damp sheets of the average country hotel.

THE POPE'S FRUGALITY.

Pope Leo is very frugal. When elected pope it is related of him that when he first sat down to dinner he found an extra dish on the table prepared in honor of his election. To the servant he said: "Do you think I can eat more as pope than as cardinal? Don't let this occur again. I hall regulate my own stomach."

THE EFFECT OF TOBACCO ON THE HEART.

Dr. Frantzel, of Berlin, reporting on the effect of tobacco on the heart, says that smoking will not affect a person for many years, and that then there will suddenly come a trouble of the heart. The finer cigars, he says, are even more likely to produce the trouble than the common ones.

LOCAL OPTION IN IOWA.

The Local Option law which has been introduced into the Iowa legislature makes saloon keepers liable for any damage which may occur to the family of a person to whom they have sold liquor.

WHY SHE WEPT.

On the tomb of a physician, erected by his widow, in Warwickshire, England, is the following epitaph: "My tears can not bring him back to life, therefore I weep."

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Mellin's Food.

PROF. DR. R. FRESENIUS, of Wiesbaden, Germany,

says:—"Mellin's Food contains 72.56 per cent. of carbohydrates; 9.75 per cent. of albuminoids; 4.37 per cent. of salts; and 13.32 per cent. of moisture. *Starch none; cane sugar none.*"

Dr. A. STUTZER, of Bonn, Germany,

says:—"Mellin's Food prepared with milk according to the directions accompanying it, perfectly fulfils every requisite of a food for infants. *Starch and cane sugar are entirely absent.*"

G. W. WIGNER, F. I. C., F. C. S., London, England,

President of the Society of Public Analysts,

says:—"Mellin's Food is not a mere starch or sugar food, like so many that are now sold, but it is a soluble preparation containing proper proportions of those nitrogenous and phosphatic matters which are essential for the health and growth of a child, but are not easily obtained in the prepared foods as usually sold.

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Are specially adapted for the correction of Bow-legs and Weak Ankles, as each shoe is so made as to exert pressure or support just where it is indicated.

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For Neatness, Comfort and Utility they are unsurpassed

Physicians and surgeons will do well to inquire into the merits of these shoes, as those who have used them in their practice pronounce them very satisfactory.

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Nasal Wash,
Mouth Wash, etc., etc.

See Dr. Seiler's article in THE MEDICAL RECORD, Feb. 18, 1888, on "*Ecchondroses of the Septum Narium and their removal.*"

These pastilles are dispensed in a convenient screw-top bottle holding thirty-two (32) pastilles, which are sufficient, when dissolved, to make two (2) quarts of the Antiseptic Solution. This Solution can be used to advantage as a wash, in catarrhal affections of the mucous membranes, and gives temporary relief in acute coryza, rose colds, hay fever, etc., etc.

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The vital principles of Beef and Mutton concentrated. A highly-condensed Raw-Food Extract. Acceptable to the most delicate touch and smell. Does not become putrid in a short time as all other raw foods do. Retained by irritable stomachs that reject all other Foods. It assimilates more readily than any other Food known to the Medical Profession. Bovinine under the microscope shows the blood corpuscles in their normal condition strongly marked, while in all other Foods or Extracts this vitally-important element is destroyed by the action of heat in cooking.

In Typhoid Fever the pathological condition consequent in the large and small intestine about the ileo-cæcal valve from the inflammation and suppuration of the agminated and solitary glands demands a food containing no excrementitious matter, while the depressing effects of the disease upon the vital powers through the nervous system make a highly nutritious and stimulating food absolutely necessary.

These indications for a food are met in Bovinine, which contains all the albumenoids of Beef and Mutton in a very concentrated form, unchanged by heat or chemicals, as well as its stimulating meat salts. The process of its extraction also insures perfect freedom from extraneous substances.

Bovinine alone, or as an adjuvant to the milk diet ordinarily employed, is of the greatest benefit in either the acute stage of the disease or during convalescence from it, as it is readily borne by the weakest stomach, and is acceptable to the taste of every patient.

In the vomiting of pregnancy the extreme difficulty of nourishing the patient is obviated by Bovinine given in small doses frequently repeated. This symptom of reflex action cannot always be entirely controlled, but its frequent recurrence is diminished, better nutrition assured, and the danger to life from inanition averted.

In all cases where rectal alimentation is necessary, no more eligible food preparation can be found than Bovinine. Reports of several cases are at hand showing increase of strength and weight in patients nourished for weeks upon Bovinine exclusively, administered in this manner.

In Dipththeria, a disease characterized by extreme prostration and rapid failure of the vital powers, where there is the most marked indication for a stimulating diet capable of bringing almost instant response, Bovinine is a most reliable food, its concentration and fluidity recommended it on account of the local lesions in and about the pharynx, while its nutrient value is demonstrated by its adaptation to the excessive prostration incident to the disease.

In disturbances of the intestinal tract accompanied by gastric irritation; in cancer of the stomach or rectum; in supplying the waste of albuminuria; in the marasmus of infancy or old age; in scrofulous conditions; in phthisis, and in so-called dyspeptic conditions, Bovinine will be found of signal service, securing better nutrition and assimilation, and alleviating the conditions present. Bovinine is a raw food and is neither partially nor wholly digested, so that when given in cases of enfeebled digestive powers it does not still further increase the inability of the gastric forces to perform their work, but restores them by its physiological stimulation to their normal effectiveness.

Mt. Washington, Baltimore Co., Md., Nov. 9th, 1886.

The J. P. Bush Manufacturing Co.

Gentlemen:—Will you oblige me by sending me six 12-oz. bottles of Bovinine by express to this place, C. O. D. My wife finds it to agree with her so well, and we use so much of it, that I hope you can sell this to me at what we pay for it for the Medical Department of the Army.

Very truly and respectfully yours,
R. Murray, *Surgeon-General U. S. A., Retired.*

I have been prescribing Bovinine in my practice for some time, and am highly satisfied with the results. In one case of *Typhoid Fever*, where every other nourishment was rejected, the Bovinine was retained, and I feel confident, *saved my patient.*

John Milton Duff, M. E.,
Professor of Obstetrics in the Western Pennsylvania College

Gentlemen:—We have used your Bovinine extensively in this institution, with very satisfactory results. Its beneficial influence has been especially marked in cases of *Typhoid Fever.*—"DETROIT SANITARIUM."

F. W. Mann, *Resident Physician*

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Recommended as a highly agreeable tonic and appetizer. It nourishes and invigorates the tired brain and body, imparts renewed energy and vitality, and always enlivens the functions.

It also makes a particularly refreshing and nutritious drink in fevers, especially during the period of convalescence, and it is largely prescribed and highly commended by the medical faculty, in this class of complaints.

Physicians desiring to test Horsford's Acid Phosphate will be furnished a sample without expense, except express charges. Pamphlet free.

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restore the phosphates that are taken from the flour in bolting. Descriptive pamphlet free.

Rumford Chemical Works, Providence, R. I.

The Annals of Hygiene.

Vol. 3. PHILADELPHIA, MAY 1, 1888. No. 5.

Communications.

SCHOOL FURNITURE.

BY PROF. T. W. CHITTENDEN, OF APPLETON, WIS.

(CONCLUDED FROM PAGE 127.)

By way of contrast to the figures thus far given, a seat was so arranged that the occupant could readily place his feet upon the floor, and a photograph was taken under these more comfortable circumstances, and to render the series complete, the model was placed on the common camp chair, with the back supported and the feet resting easily and firmly on the floor. The appearance of comfort and the absence of constraint in these figures, 3 and 4, are in striking contrast to those which precede and follow.

In one of the lads selected to serve as models during the course of the investigation, a decided lateral spinal curvature was observed, and in several other boys a tendency in the same direction was noted. All these cases were in individuals of small stature, and where inquiry was practicable it was found that all occupied desks considerably too high for them. In the first and most strongly marked instance of this character, the history was instructive. The child was a nervous, ambitious boy of about ten years old, who had a high rank in his classes, and had taken several prizes in work involving much writing and drawing. He had a very considerable amount of work of this kind, part of which was done at home and part at school; at home an ordinary table of about thirty inches in height was used, and at school a desk of about twenty-seven inches in height at the lower edge was assigned to him. But the school work was not all that this child accomplished; his father desired to make him a good classical scholar also, and had been giving him lessons in Latin for some two years. At the time the boy came under the writer's notice he had "been through Cæsar, and was reading Virgil," written translations having formed a considerable proportion of the work done. Of course it will be understood that only certain books of Cæsar's Commentaries, probably the first three or four, were meant by the statement quoted, but still the amount of written work done when added to that required at school was large and must have occupied several hours daily. The table used at home was thirteen inches higher than the seat, and the desk occupied in the school-room was twelve and one-half inches higher than the seat; *i. e.*, the perpendicular distance between the edge of the seat and the edge of the desk was twelve and a half inches, but the descending curve of the seat and the slant upward of the desk increased this distance by probably at least an inch. It may here be noted that the difference in height of seats and desks occupied by two adults of average stature, both of whom write a great deal, is, in one case ten, and in the other twelve inches, one preferring a somewhat higher seat than is liked by the other.

Thus it will be seen that this boy of ten years old, occupied for several hours daily a seat and desk of which the difference in height was greater by at least one and a half inches than the difference in seats and desks adapted for adult use, and it seemed very probable that the deformity noted was chargeable wholly to this circumstance. A German investigator has remarked that nine-tenths of all cases of spinal curvature that come under the physician's notice begin during the years of school attendance, and that their character corresponds with the position occupied while writing;* in all the instances observed by the writer the evidence tended the same way, the right shoulder being higher than the left, and the convexity of the spinal curve being toward the right side.

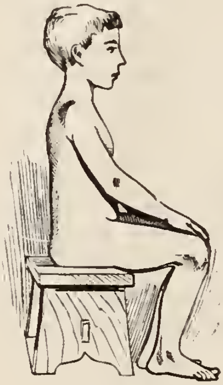

Fig. 3.

In the case just noted, the father's attention being called to the trouble, which had wholly escaped his notice, the use of the objectionable furniture at home was abandoned, a lower desk was secured at school; a proper course of treatment being instituted, the result was a marked improvement which continued up to the date when the boy passed from the writer's observation.

For the purpose of illustrating the production of the condition just described a seat and desk were properly arranged and a well built boy was placed in position and photographed from behind. Fig. 5 was engraved from the picture thus obtained, and an inspection of this figure will demonstrate how any long-continued maintenance of the posture represented must almost infallibly result in deformity and disease. Observation in any school-room will show moreover that the conditions requisite for producing such deformity are only too frequently present.

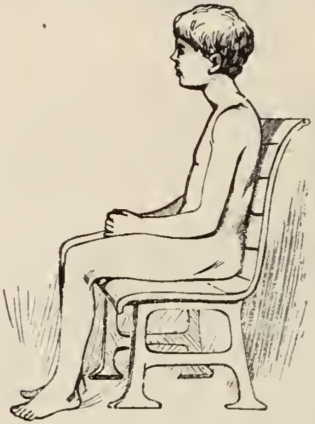

Fig. 4.

A second representation of the same position, taken from the left hand of the subject is given in Fig. 6, examination of which, even the most cursory, will show that the attitude is well adapted for the production of near-sightedness as well as of spinal curvature.

An arrangement of seat and desk adopted in some school-rooms, places them much further apart than they should be. The design in this arrangement is to give sufficient space between seat and desk to permit the scholar to stand at his place in the school-room when reciting or under other circumstances without making it necessary for him to step out into the aisle, which in these cases is reduced to the narrowest dimensions. In some instances where this arrangement existed the desks were proportionately too high for the seats. It is right to say in connection with these observations that in every case where the conditions described were noticed the furniture was "home made" and the buildings were by no means modern. Nevertheless it is quite possible that the arrangement does exist in Wisconsin elsewhere than in the schools visited, as it has been found even in high schools in the State of Massachusetts.

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*Fahner; "The Child and the School-desk."

From a model so placed as to present these conditions, Fig. 7* was photographed, and an inspection of this figure will make plain the reason why a school-room where seats and desks are so placed must at times become a scene of discomfort and consequent restlessness against which a teacher would strive in vain. The photograph shows as no outline engraving can show, the muscular tension in almost every part of the body, but the figure as given tells a story of strain that cannot be long endured, and to an amount to which no child in the school-room should be subjected.

Various plans have been devised by the makers of school furniture to adapt their wares to the conditions of school life, and the results have been, upon the whole, very good, Great improvements have been made especially in the construction of the school desk, although attention to the seat has not been lacking. Still no desk of which the writer has knowledge is perfect in all respects, and the seats are still further from being realizations of the physiological idea. One serious difficulty with the seats, and one confessedly very hard to overcome, lies in the fact that the weight of the whole body is, in all of the seats examined, borne upon the two points anatomically known as the tuberosities of the ischia, commonly called the haunch-bones, and this apparently is unavoidable so long as the present general custom of using double seats and desks is in favor, and so long as the method of seat construction now in very general use is continued. This method, as is well known, consists in making the seats of narrow slips of wood, through the width of which holes about one-fourth inch in diameter are bored. Stout iron wires are passed through these holes, as many slips of wood being thus fastened together as are needful to form a seat of the width required, and the system thus formed is curved from front to rear, the curvature varying according to each maker's ideas of fitness; the back being built up in the same way, the whole seat is secured to the front of a desk, seat and desk with the iron frame thus forming a remarkably strong and rigid system. Now, while a seat thus made is a great improvement upon the flat board still to be seen doing duty in many a Wisconsin school-room, it is yet defective in that regard is paid only to its lines from front to rear, and to some extent to the curvature of the back also. No provision is made for the lines of the body laterally, *i. e.*, from right to left, and hence the weight of the body instead of being distributed over the whole extent of the great glutei muscles, as it would be were due attention given to the matter, is concentrated chiefly upon the two points already mentioned, and the child unconsciously seeks relief by shifting to one side, always in the case of a given individual in one direction, movement to the opposite side being prevented by the presence of his companion at the same desk.

Fig. 8 shows the attitude under these

---

*The figure as engraved shows a larger amount of support given to the body than was represented by the photograph, and a much smaller degree of muscular tension than really existed.

circumstances, the posture being one that will be recognized by every observant teacher, although the reason why it is assumed may very probably wholly escape recognition. When, as is often the case, the arm of the opposite side is elevated so as to rest on the desk either in front or behind, we have a further factor toward the production of spinal curvature more or less pronounced. As already intimated, probably the only remedy for this defect is the abandonment of the method of making seats now greatly in vogue, and the adoption of some plan, to the evolution of which American ingenuity ought to be adequate, that shall provide seats hollowed out laterally, as well as from front to back, thus distributing the weight of their occupants over the whole surface. Seats somewhat approximating to this construction were made and used to some extent in school-rooms in the eastern states some ten or twelve years ago; an objection to their general employment was in the fact that they could not be secured to the floor, and therefore were the occasion of a large amount of noise. Another effort to reach the same end was made by the use of a revolving chair, mounted upon a screw working in an iron pedestal, and provided with a cushion. Neither of these plans have been tried, so far as known in any Wisconsin school. The second was much the more satisfactory in its practical working.

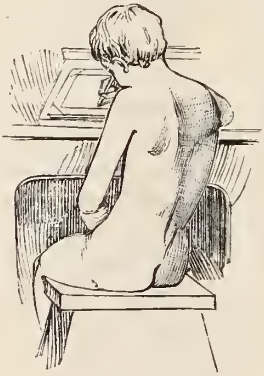

Fig. 5.

Reference has been made to the fact that the school desk is much farther advanced toward an ideal condition than is the school seat. One of the best forms of desk, theoretically, is so constructed that a portion may be so turned back as to form a comfortable reading easel, thus enabling the scholar using it to study in a much better physical position. Desks embodying this principle are supplied by more than one maker, but in one form of construction they are by no means free from danger in their working. An iron plate attached to the side of the desk at the point where the reading easel is turned into the vertical or horizontal position, is so arranged that a powerful shearing action results from its movements, and the leverage is so great as to make amputation of one or more fingers entirely possible, while grave injury to those members is highly probable should they by chance or inadvertence be caught at the point or line of action. A well-known teacher of this State has informed the writer that some painful accidents from this cause have occurred under his personal observation, none of them, happily, proving very

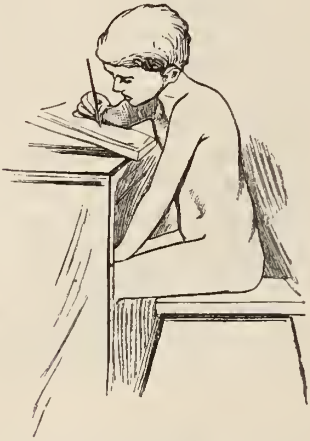

Fig. 6.

serious however; an examination of the mechanical action of the desk promptly revealed the method of their production, and the ease with which complete dismemberment might have resulted. This objectionable feature would appear to be easily avoidable, and it should engage the attention of designers and makers, since it attaches a grave risk to the use of what, without it, would be in many respects, a very admirable article of school furniture.

Such are some of the observed defects of the furniture to be found in use in the school-rooms of Wisconsin. Had it been practicable to carry out the idea first conceived and to give representations of some desks and seats actually to be seen in some of the most prosperous and wealthy districts in the State, the result might have been more interesting in some respects, but probably hardly of greater value to the sanitary student. The reasons for the abandonment of the original design were the following: few school-rooms were visited that were not so crowded with furniture as to render the placing of a camera where it was wanted wholly impracticable; even where matters were otherwise the conditions of light requisite for even very moderately successful figure photography could be obtained, if at all, only at great expenditure of time and labor.

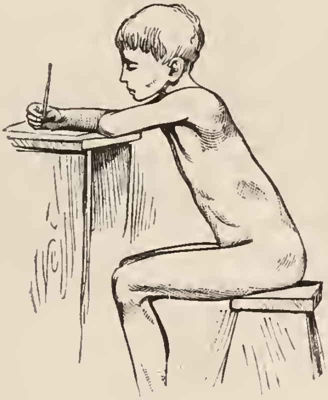

Fig. 7.

Added to these considerations were the difficulty and uncertainty of obtaining suitable models away from home, and the necessity of respecting the natural and proper modesty of those actually employed, all of whom were lads of intelligence and refinement. For these reasons it was deemed better to present types rather than actualities, but as has already been said, these types were all based on the careful study of actual conditions aided by notes, measurements and sketches made on the spot, and the aim has been rather to tone down than to color highly, or exaggerate at all.

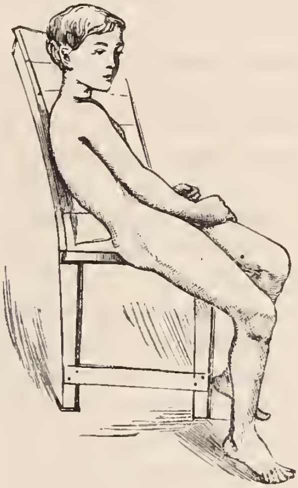

Fig. 8.

That much and grave evil has resulted from the cause discussed in this paper there is abundant medical and surgical evidence to prove. Especially in the earlier years of school life is the human being most liable to injury therefrom, and growth and development once ended the injury is irreparable; the duties of life must thenceforward be done as best they may under the enormous disadvantage imposed by a permanently impaired organism, and physical forces inadequate to bear the inevitable strain. There is neither time or place in the economy of nature for repenting of the sins of the maker of school furniture.

The stronger the physical man the more assured are his chances of success, not only in matters involving physical work, but in mental labor of any kind. Whatever may be the opinion held with regard to the identity or connection of mind and body it is a fact within the general knowledge of mankind that mental labor can be performed only at the cost of physical waste. Brain work of any kind, intense and continuous thought, absorbed attention even, is possible only at such cost, and physical weariness, yes, physical exhaustion will follow on these or any one of these if sufficiently prolonged, as certainly as on prolonged use of the blacksmith's sledge hammer or the lumberman's axe. Very few are the parents having ambitious, hard-working children at school, who have not seen them return home, tired out at the end of the day. It is an unwise policy to add the fatigue induced by avoidable discomfort to that inseparable from school work.

The best school system is that in which the necessary restraints of school life and discipline, onerous at best to the children subjected thereto, have the least results in retarding development and growth. Physiologists have long been urgent in recommending that the beginning of school life be postponed to an age when the system is somewhat better able to endure the school regimen than it can be at four, or even at six years old. Hitherto the literally vital questions involved in school work have been almost wholly ignored by school authorities, but these questions are now forcing themselves into notice and they will not be settled until the schoolroom shall become the place where the progressive development of the child in the physical, the intellectual and the moral aspects of its being shall be advanced by all possible means, and when the truth that "Health is the unit that gives value to all the zeros of life" shall be constantly present in the minds of those who rule. "Education itself is but a zero unless health gives the ability to use it for the profit of the individual and the race."

In the school-rooms of to-day are the men and women to whose hands the whole of the vast material and other interests of the world will be committed within the next score of years, and in these rooms preventive medicine will yet find a field of operations promising greater and more enduring results than any to which the attention of the sanitarian has yet been turned. Some earnest of what is to be accomplished in this direction may be seen in the city of Brussels, where for the past twelve years all schools supported wholly or partly from the public purse have been under regular and systematic sanitary inspection by the health authorities, five skilled sanitarians giving their whole time and attention to the oversight of upwards of thirty schools. It does not appear probable that any such extensive and thorough supervision will ever be given to the public schools of Wisconsin as is practiced in Brussels, and in some respects it is not desirable that it should be; the example there set will not be lost however, and it is certain that more will be done in this direction in perhaps the near future than has been done in the past, and that the benefits resulting will be proportionate to the extent of the work. When that time comes the instruments of distortion and torment which are now to be found in many a schoolroom in the guise of seats and desks, will have been consigned to the wood-pile, save here and there a specimen preserved in some museum.

It will probably be long before our schools and school houses will even approximate in all respects to an ideal sanitary condition, but none the less is it incumbent on all who love their fellowmen, who realize that the world will speedily be given over to the hands of those who are now children, and that the work of the world will be well or ill done in that quickly coming time as the children of to-day are well or ill-trained to endure its stress and strain, to set up a high standard, and to labor with all their strength for its general acceptance.

:o:

NOSTRUMS AND NOSTRUM VENDERS.

BY J. M. FRENCH, M. D. MILFORD, MASS.

Human nature is still full of strange superstitions. Mankind has not yet outgrown its childhood stage, and its belief in charms, amulets and incantations. Barnum never spoke more truly than when he said, "Men love to be humbugged;" and this characteristic is in no way more clearly displayed, than in the enormous and well-nigh universal consumption of patent medicines and other secret remedies, and the equally enormous patronage of quack doctors and nostrum venders of every sort.

The idea does not seem yet to have penetrated the inner consciousness of a large proportion of mankind, that health is dependent upon obedience to natural law, rather than upon dosing and drugging; or that the true province of the educated physician is that of a conservator of health as well as a curer of disease. Rather it seems to be practically considered that the maintenance of health is a matter entirely outside of human control; while recovery from disease is a very simple affair, which can always be brought about by the use of the proper drug—or it may be, by the exercise of the proper faith, or the swallowing of sugar pills.

Laboring under these impressions, a man of intelligence, who is accustomed to exercise good sense in ordinary matters, consults his physician in regard to what he supposes to be a trifling indisposition. The physician, a man of wide experience and sound judgment, who is presumably possessed of the confidence of the patient, after close questioning and a careful examination into all the symptoms in the case, informs him that he is suffering from one of the chronic forms of Bright's disease. He then proceeds to discharge his duty as a wise medical counsellor, by explaining to him the nature of his disease, its varying forms and symptoms, and its inevitable termination. He shows him how its course may be influenced by climate, diet, occupation, habits of life, and medical treatment, describing the proper course to be pursued in each respect. He assures him that while he is suffering from a form of the disease which is absolutely incurable, yet by wise management, proper care, and a strict observance of the general principles which have been laid down, he may hope to delay its course, limit its ravages, and even to enjoy fair health and accomplish a reasonable amount of work for several years to come.

The man goes home depressed and disheartened, broken down in spirits by the unwelcome announcement of his physician, which still as yet he hardly credits. While he is meditating on the uncertainties of existence, and debating in his own mind the advisability of undertaking the course of living which the doctor has laid down, he takes up his religious newspaper, and reads in its columns a glowing testimonial from a distinguished clergyman, certifying to the virtues of so-and-so's Kidney Cure, which is warranted to cure every case of disease of the liver or kidneys, "*if taken in season.*" (Even so good an authority as Dr. Oliver Wendell Holmes declares his belief that every disease may be cured if taken in season, "but," he adds, significantly, "in some cases the treatment must be begun at least a hundred years before the patient is born.")

Or it may be that his attention is arrested by the grotesque buffoonery and extravagant gesticulations of some itinerant nostrum vender of the baser sort, who is making a triumphal journey through the country, mounted on a gilded chariot drawn by four milk-white horses and driven by a gentleman of color. By his side is a skillful cornetist, whose duty it is to draw a crowd, while he himself discourses in stentorian tones to the gathered multitude, of the miraculous virtues of Old Doctor Such-an-one's infallible remedy for Bright's disease, or his equally wonderful Indian Vegetable Liver Pills—all of which are warranted to cure, without any change of diet or mode of life.

The result, in nine cases out of ten is, that the sick man jumps at the promise of an easy cure, throws to the winds the carefully considered advice of his family physician, and takes up with the quack remedies of the nostrum vender.

Disease, to him, is an evil spirit to be exorcised by the use of drugs, not an impairment of vitality to be built up by right living. With him, obedience to law counts for nothing, while So-and-so's kidney cure is an "open sesame" to the Temple of Health, whereby he may enter in, and revel in its stolen treasures at will.

Webster's definition of *nostrum* is "a medicine, the ingredients of which are kept secret for the purpose of restricting the profits of sale to the inventor or proprietor." Accepting this definition, let us consider some of the objections to nostrums in general.

To begin with, the vast majority of the whole class are vile compounds in every sense of the term. They are put up by men who have no knowledge of either medicine or chemistry, and are dependent for their sale solely upon poor whisky and liberal advertising. They are potent for evil, and for evil only. They serve to foster the appetite for alcoholic stimulants, and to form the scarcely less objectionable habit of medicine-bibbing and self-drugging.

In the next place the exact composition of these preparations is invariably kept secret. Therefore, the nature of each of the ingredients not being known, there is no standard by which to judge of the value of the compound, except the exclusively laudatory certificates which are furnished by the manufacturer, and the preposterous guarantees of the vender. How much reliance is to be placed upon these, each must judge for himself.

Furthermore, it is a recognized principle in medical ethics—a principle acknowledged and acted upon by every honorable physician—that whenever any remedy or combination of remedies is found by him to be of value in his practice, it should be freely made known, for the benefit of the suffering everywhere. If it be objected that it is made known to the profession only, and not to the public, the answer is plain. There are no secrets in medical science. Its literature is open to all the world, and he who will may read. Yet none but a physician can use the remedy aright. For in medicine as in other applied sciences, a casual reading of some few of the important facts pertaining thereto, does not give a mastery of the science, nor the skill rightly to apply it.

In the third place, these nostrums are almost invariably guaranteed to do more things than it is within the bounds of possibility for any one medicine to accomplish. The very fact that a remedy is powerful for good in one case, makes it necessarily powerful for evil in others. Skill in medicine consists largely in the ability to adopt remedies to conditions, selecting the proper drug for each individual case, and excluding all others.

Granted that a certain nostrum may accomplish good when used in the right cases and in the proper manner; it is plainly impossible that it should be a desirable or even a safe thing to use in cases which are widely different and even opposite in their nature. Yet it is recommended with perfect confidence not only for a whole class of cases, but for many unlike classes; so that the poor sufferer has no guide but the word of the vender, whose sole object is to secure the largest possible sale for his nostrum.

Finally. Whenever any person is benefitted, or imagines himself to be benefitted, by the use of any secret preparation, the proprietors or their agents stand ready to catch up the fact, or the fancy, and advertise it far and wide. But for every one who is helped, there are a hundred others, who either fail to receive benefit, or are positively injured; and no one ever takes the pains to bring these cases to the knowledge of the public. If a man thinks he has been helped, he straightway, in the gratitude of his heart, prepares a glowing testimonial, setting forth the virtues of the nostrum, and the wonders it has accomplished for him. But when he finds instead, that he has thrown away his money and received no benefit, or been made worse, he naturally feels that he has made a fool of himself, and keeps as quiet about it as possible.

What physician is there in all the land, who could not fill the newspapers with unimpeachable testimonials of his skillful treatment and wonderful cases, did not his conscience and ethics of his profession alike forbid him to engage in such disreputable practices?

Often, indeed, the published statements are not only exaggerated, but premature. The victim of disease mistakes temporary relief for permanent cure, and makes haste to certify to that which a little further waiting shows him he has never received.

A case in point occured some years ago within the knowledge of the writer. The daily papers of one of our smaller cities contained a strong and enthusiastic statement from an estimable deacon residing in one of the suburban towns, to the effect that he had been cured of long-standing nasal catarrh by the nostrums of a notorious quack stopping at the time in that city. Before many weeks had passed, however, the deacon discovered that he had really received no benefit, and was no better than before he began the treatment. Then, in the simplicity of his heart, he sat down and wrote a letter to the so-called "doctor," stating the latest developments in the case, and requesting that his testimonial be withdrawn from the public prints. No attention being paid to his very reasonable request, he wrote a second time, protesting against any further use of his name. Soon the protest was changed to a demand, but still without avail. Finally, when his patience was exhausted, he peremptorily threatened the "doctor" with a public exposure—and then, at last, his card was withdrawn.

Yet still the fact remains, in spite of innumerable examples of this kind, in spite of reason and experience, in spite of increasing intelligence and the general teaching of the laws of health, that a large proportion of men and women continue and will continue to prefer mystery to simplicity, bitter drugs to simple food, and the brazen assertions and lying promises of ignorant charlatans, to the candid and truthful explanations, and the reasonable but sometimes unwelcome advice of educated physicians.

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HAT-BANDS A CAUSE OF HEADACHE.—A physician (says the *Medical Bulletin*) analyzed a black band worn by a patient suffering from headache, and found three grains of lead. He concludes that many headaches are due to the absorption lead from the hat-band.

SCHOOL HYGIENE.*

BY D. F. LINCOLN, M.D., OF BOSTON, MASS.

INTRODUCTORY.

Two men should be mentioned at the head of an essay of this sort, as deserving to represent the beginning of the "movement" in school hygiene. They are Cohn of Breslau, whose examination of the eyes of school-children made a very powerful impression on the public mind some sixteen years ago, and Virchow, whose official report to the Prussian minister of education (published in 1859), is the most prominent document that can be referred to as leading the way in reform.

It is not intended in this essay to quote largely from German authorities. The mere statement of principles and facts must suffice in so wide and manifold a subject as the present.

It should be noted that Virchow makes use of the expression "school-diseases." He is probably entitled to the credit of inventing the word. In the list which he gives there is one affection which we need not dwell upon, namely, nose-bleed. In regard to another,—tubercular consumption,—there is perhaps a deficiency of evidence as to its causation in schools in America, though there can be no reasonable doubt that it is so caused, and the writer has the highest American authority for saying so.

Deformity of the spine (lateral curvature) is probably not so common by a good deal in America as Guillaume represents it in Switzerland. We lack decided evidence; but it is spoken of under the proper heads in this essay.

It remains to note the division of the subject which has been followed, viz.:

1. Site of the School-House.
2. Plan and Arrangements of the Building.
3. Ventilation and Heating.
4. Sewerage.
5. Hygiene of the Eye.
6. School-Desks and Gymnastics.
7. Affections of the Nervous System.
8. Contagious Disease.
9. Sanitary Supervision.

I. SITE.

In choosing the site for a school-building, we should take into account a number of things which might be overlooked in the case of an ordinary building. Dampness and malaria are of course fatal to a site for any purpose. For schools we must plan to have abundant light (much more than will suffice for dwellings and shops), and to have the sun's direct rays enter each room at some time of the day. The business of the school requires the absence of noise,—a point which may be overlooked in business edifices; and the social character of the neighborhood, and its moral nuisances, are also to be considered.

Dampness. Without going much into details, the use of some method of drainage and of some shield against incoming water is suggested, as likely to be needed in many places. The cellar, as hygienists know, ought to be carefully guarded from contamination of soil and air, and should at all times be dry. Grading will suffice to keep off most of the surface water. Underground water may be provided for by a ditch, dug outside of the foundation and reaching deeper, than the cellar floor, and either laid with drain tile, or filled to the depth of a foot with loose stones, after which earth is thrown in. A similar trench may be cut in the floor. All such drains are to be led to a proper place for discharge. The floor may be made damp-proof, according to Col. Waring's suggestion, by six inches of well rammed clay, or by asphalt between two layers of cement; the foundation walls may be protected by a coating of asphalt outside. A damp-proof course of asphalt in the walls above the ground is useful in preventing moisture from rising.

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*This is the Lomb Prize Essay of The American Public Health Association.

Small country schools, if without a cellar, should at least have an air-space underneath the floor, with a few openings in the underpinning, to give ventilation to the space.

River bottoms, places where mist is often seen, and the neighborhood of ponds, are undesirable places for building. No business is more interfered with by noise than that of school. The neighborhood of large factories, saw-mills, foundries, railway stations, engine-houses, or police stations, is therefore to be avoided. There need be no excuse for placing a school-house near any such of the latter as are under public control, or for utilizing a town lot by putting engine-houses, school-houses, and a police station, in close neighborhood. Regard ought to be had for the probable growth of a city, and avenues likely to become main lines of travel should be avoided. These things are mentioned because they are sometimes strangely disregarded. In large cities it is next to impossible to procure sites which fully satisfy the demand of hygiene in respect to the supply of light. Corner lots are enormously expensive, besides being noisy. The *Sanitary Engineer* prize designs for public schools, published in 1880, are instructive as showing that in the opinion of the prize committee,—

"The most essential thing in a public school is sufficient light. The conditions imposed in this competition make it impossible to secure this light without either overcrowding of class-rooms, or an unsatisfactory arrangement of corridors, stairs,

"Upon so restricted a site as that contemplated,* light can best be secured by making the building very high, higher than for other reasons is desirable.

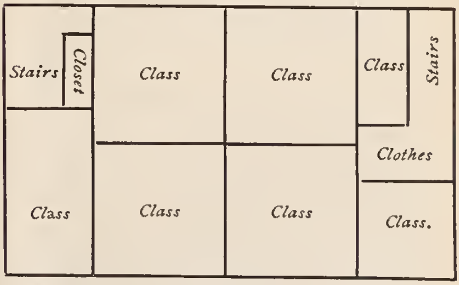
"It should be distinctly understood that the committee do not recommend the plans to which they have given awards as being the best designs for a school building, but only as the best plans for a school building to be built in a huge box, lacking one side and without a top, the sides of which box are about sixty feet high, which seem to be the conditions under which school buildings have been erected in New York, and in which from 1,500 to 2,500 children have been crowded."—(*San. Engineer*, March 1, 1880.)

The evil complained of is a general one. New York is not the only city where fine new school buildings are erected, with a pleasant outlook all around, only to have four-story houses placed on both sides, within a dozen feet of their windows, in the course of a year or two. This is one of the worst failings of city schools.

II. PLAN AND ARRANGEMENT.

Many of our oldest school buildings are extremely faulty. In fact, we have seen two reformations in school architecture, one dating from the publication of Henry Barnard's work, in 1839, while the other is now taking place. The progress made

Fig. 1.



Plan of School-house illustrating excessive compactness.

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*"A lot fronting north, of 100 feet front and 100 deep, and enclosed by buildings on adjoining lots at the sides and rear, of average city height, say four stories." (Advertisement.)

with a few years past has been as great as at any other period, and types of edifices, which were unchallenged models of excellence fifteen years ago, are now superseded.

In schools containing several rooms, one of the commonest faults used to be the parsimony of space, which cut down the room for entries to a minimum, and packed class-room behind class-room without breathing space. The effect of this was to greatly restrict natural ventilation. Glass sliding doors were very popular: it may be feared that they still are in some places. Spiral stairs were admired. Architectural features, such as colonnades and heavy Greek entablatures, are still seen on some older buildings, the former serving to cut off a certain part of the light, the latter taking up space in the wall which ought to be devoted to windows. Excessive hight is a fault which is only just beginning to be remedied. It arises partly from a false taste in architecture, partly from the expensiveness of land in cities.

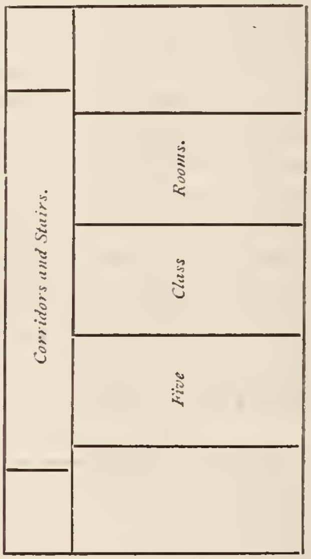

Fig. 2.

Plan—Same Fault.

An instance of the excessive compact style of building is given in the illustrations (Figs 1 and 2), which are taken from the Report of the New York State Board of Health for 1881; also in Fig. 3.

Glass sliding doors are supposed to assist in lighting rooms which are faultily lighted in other respects. They are far less effectual than is thought. A person standing in the inner room looks out through the glass doors upon well lighted rooms, and thinks the light he sees is entering the room where he stands—a false impression, which should be corrected by looking the other way. Light thus transmitted is nearly horizontal in direction, and has very little effect of brightening the page of a book lying on a desk. Glass also reflects some light, and absorbs some. In short, light thus obtained is not good light for the purposes of study. The rooms in Fig. 3 have glass partitions.

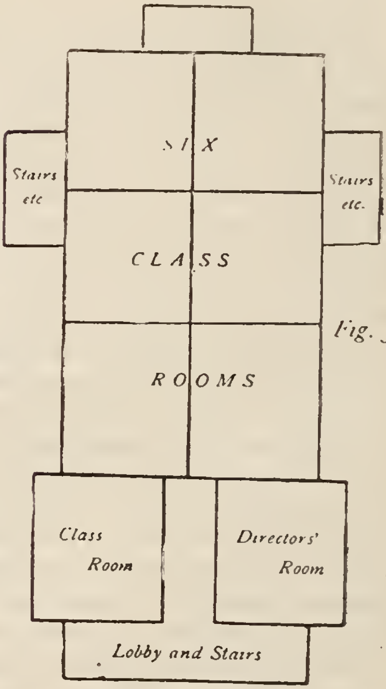

Fig. 3.

Plan of School. Philadelphia.

Another common fault in plan is to have one of the rooms of such dimensions that it is impossible to light it advantageously. Such very large rooms form an essential part of many high schools, even of modern construction; they are used as rooms of assembly, and also as the general study rooms, each pupil having a desk there, and only leaving it as occasion offers to go to small recitation-rooms. Such rooms are usually lighted from the right and left sides. The width between the windows is sometimes as great as seventy feet. The great distance of the windows from the central parts of the room is a marked disadvantage. Twenty or twenty-five feet is as far as a desk ought to be from the window.

Associated with this fault,—or independently,— may be found a deficiency in the size of recitation-rooms. It seems to be supposed that these places do not require as much space as ordinary classrooms, the fact being, that they are apt to be in use about all the time, and therefore are in no way to be excepted from strict requirements. When looking for instances of bad ventilation and overcrowding, one should not omit to visit these rooms. The allowance of cubic space for each scholar will be mentioned later.

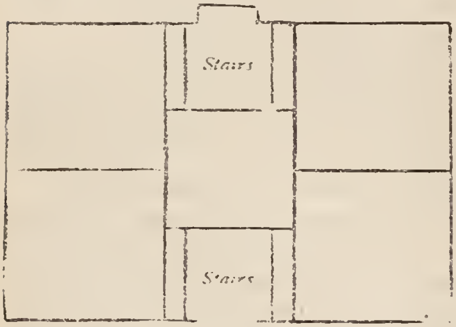

Fig. 4.

A type still in vogue, which has some decided merits, may be called the four-square plan. It contains, on each floor, four rooms and a corridor: the corridor runs from front to rear, and the rooms are in pairs to right and left. There is a staircase in front and rear. Each room is lighted from one side and the rear of the scholars: each room is a corner room. The type which is likely to supersede this one is based on the wish to give more light and ventilation in the corridors. Both are illustrated (Figs. 4 and 5). It would be rash, however, to point to any one plan as likely to have exclusive success.

The objection to spiral stairs is, that the tread is very narrow on the side next the wall, and a careless person easily gets a severe fall. The tread should never be wedge-shaped. It is a good plan to break up a flight of stairs by placing a landing half-way, with a full turn. Both stairs and corridors must be well lighted. The steps must be easy to asscend.

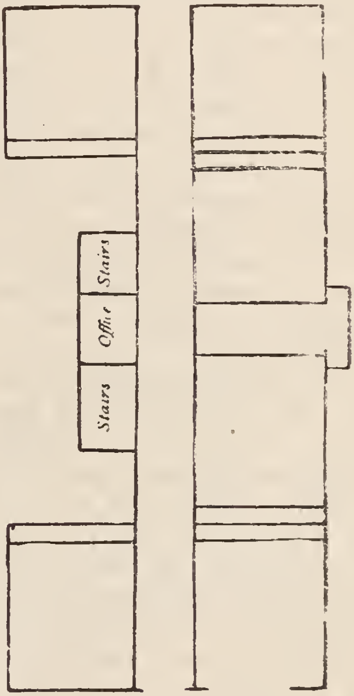

Fig. 5.

It is desirable to build stairways as nearly fire-proof as possible. They may be enclosed in brick walls, so that fire from the main edifice will reach them with difficulty. One staircase should be placed at each end of the building, so that no room need be cut off by smoke or flame at the outbreak of fire: it will be easy to go a step further, and place them outside, or partly outside, of the building, for more complete isolation. If the framework is of iron, the treads may be of hard wood, which makes them for all practical purposes fire-proof.

These precautions are among the first to be taken against fire—we might say against panic, for the danger to life from fire, in a school where children are orderly, is scarcely to be thought of. A thousand children can be got out of a large school within two minutes of an alarm from the principal. They say it can be done in less time; it depends, however, on having the children exercised in a special "fire-drill,' the sole object of which is to pass them out as quickly as possible. In the best schools this drill is given *without warning* once a month.

Further precautions against fire may be taken: they ought not to be limited, however, to prevention of combustion, but should include some means for carrying off smoke, which is so apt to cause panic. To this end, it is proposed, by the chief engineer of one of our large cities, to have a large valve, easily opened, at the roof, so as to draw out great quantities of air or smoke. There may be also extra flues, built in the partition walls, communicating with such floor spaces or wainscot spaces as may be supposed likely to be the seat of fire. The flues will not afford a supply of air to the flame, but will only carry off the smoke and gases instead of letting them come through the floors. The writer does not express an opinion upon these suggestions, but they rest on good authority. Fire-proofing beneath the floor with layers of plaster is certainly to be recommended; also, the practice of bringing the floors close up to the walls, thus cutting off the connection between story and story, which is so often the means of transmitting a fire with surprising rapidity to the upper stories. Perhaps the chief benefit of all these precautions, as regards safety of person, lies in the feeling of security against sudden conflagration, which will give confidence in the moment of alarm to some teachers who might otherwise be overpowered by sudden dread.

There are some buildings in most cities which were never meant for schools, but which are crowded with poor children, whose danger would be imminent in case of fire. A so-called fire-escape, placed on one of these wooden traps, affords a possible means of safety, but, for the most part, a good staircase in a well built school-house is the best "fire-escape."

The passages to be passed through by the scholars in reaching the door should be wide; the outer doors should swing towards the street. There should be two doors at least,—one for each staircase.

The competition for prizes for model school-house plans, which took place in 1880 in New York, has already been mentioned. The conditions upon which the committee of award based their judgment deserve to be quoted. In their opinion "a public school building to be erected in a large and densely populated city, should possess the following qualifications, viz.,—

"I. At least two adjoining sides of the building should be freely exposed to light and air, for which purpose they should not be less than sixty feet distant from any opposite building.

"II. Not more than three of the floors should be occupied for class-rooms.

"III. In each class-room not less than fifteen square feet of floor area should be allotted to each pupil.

"In each class-room the window space should not be less than one-fourth of the floor space, and the distance of the desk most remote from the window should not be more than one and one-half times the height of the top of the window from the floor.

"V. The height of a class-room should never exceed fourteen feet.

"VI. The provisions for ventilation should be such as to provide for each person in a class-room not less than thirty cubic feet of fresh air per minute, which amount must be introduced and thoroughly distributed without creating unpleasant draughts, or causing any two parts of the room to differ in temperature more than 2° F., or the maximum temperature to exceed 70° F. This means that for a class room to contain fifty-six pupils, twenty-eight cubic feet of air per second should be continuously furnished, distributed, and removed during school hours.

"The velocity of the incoming air should not exceed two feet per second at any point where it is liable to strike on the person.

"VII. The heating of the fresh air should be effected either by hot water or by low pressure steam.

"VIII. The fresh air should be introduced near the windows; the foul air should be removed by flues in the opposite wall.

"IX. Water-closet accommodations for pupils should be provided on each floor.

"X. The building should not occupy more than half of the lot."

The comments by way of exception that need to be made upon this are, that in VI it seems hardly possible to expect a temperature varying only two degrees all over a room, if the difference between ceiling and floor is intended to be included; and further, that the method of introducing fresh warm air, etc., given in VIII, is not the only desirable one, as will be shown under "Ventilation" later in this essay. In No. IV the size demanded for windows is based on the requirements of city architecture.

In other respects the recommendations deserve unqualified approval, as embodying the chief sanitary requirements in a city school-house.

Height of School Buildings. Not merely on account of danger from fire, but for reasons affecting the health of pupils, excessive height has been, within a few years past, much spoken against. It seems desirable, on the whole, to limit the height to three stories, of which the first two should contain most of the school-rooms. The reasons for this restriction are such as apply chiefly to girls of the age of fourteen and upwards; more especially, to young ladies in normal schools and seminaries. Not to enlarge upon this point here, it is well to notice the unwillingness of such girls, if placed in the upper story, to descend to the play-room or yard for recess. The climbing of many flights is an evil which may come about in another way, viz., when scholars study in one story and descend to another for each recitation. In such cases the need of consulting teachers before building is evident. The plan of the house should be made to depend on the plan of study, and architects can seldom fail to gather some useful information from those conversant with the uses to which their work is to be put.

A point to note in conclusion is the smallness of the yards allotted for the children's play in American cities as compared with what is found in Europe.

(TO BE CONTINUED.)

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CARPET BEATING.

Carpet-beating in the open air has been forbidden by the Conseil de Salubrité, of Paris. They must be beaten in closed rooms, and the dust subsequently disinfected.

FOOD LAWS.

BY HENRY LEFFMAN, M. D.

ABSTACT OF A PAPER READ BEFORE THE MEDICAL JURISPRUDENCE SOCIETY, OF PHILADELPHIA.

The conviction and sentence to imprisonment, a few days ago, in the criminal court of this county, of several persons for adulterating food, may serve very well as a text for some remarks on the present state of laws governing this topic, and, I hope, enable us to make a step toward a rational system of sanitary jurisprudence. There can be no question that, although a great interest has been developed of recent years in questions of hygiene, yet as an actual science it is in an extremely chaotic state. To the medical profession —as a body—will necessarily always be trusted the guidance of the community in such matters ; but this profession only gives partial attention to the topic. The problems of diagnosis and therapeutics are of so much closer interest, that we may pardon the general run of practitioners for ignoring a subject of uncertain nature, and, perhaps, looked at in a selfish light, one which is really antagonistic to their prosperity. That this latter view is not imaginary I know from conversation with some physicians. In the history of sanitary legislation we have the usual array of errors that have always attended attempts to restrain by law the perversities of mankind. Many of the acts have been passed either under popular clamor or in deference to the influence of some real or supposed authority in the field, and as a result great injustice has been done, or the statute books encumbered with useless provisions.

The first point to be considered is how far the ignorance of the seller should be considered as an excuse for the sale of adulterated articles. In the chrome-yellow cases it was apparent that the bakers had no knowledge of the dangerous nature of the material they were using, but they, of course, knew full well that they were adulterating. In the case of the noodle maker, the offence was still more flagrant, for the adulterant was there used to enable a particular ingredient to be used in less quantity and yet have the product look as if made properly. The chrome-yellow was used as a substitute for eggs. Fortunately for the public example of a conviction in these cases, the act of Legislature does not say that the adulteration must be dangerous, so that it was merely required to prove that some addition had been made. The issue, however, may be presented in much more complicated form. The act provides for punishment only in case of knowledge of the fact of adulteration ; the word "knowingly" is repeated so frequently that it becomes very significant. It leaves wholly out of question the sale of food by others than those manufacturing it, and may be said, also, to leave undecided the definition of what constitutes adulteration, This, of course, would be a simple matter to decide in many cases, but there are others which would arise in which the need of some authoritative definition would be felt, though, I suppose, such might be left to a jury.

To arrive at what I consider a sound system of protective food legislation, it will be necessary for us to note that many articles pass through a number of hands before reaching the consumer. A system which holds only responsible the manufacturer can never answer the purpose. Adulterated food ought to be regarded as a contraband article wherever found. Every person dealing in it should be held responsible for its condition, and no plea of ignorance of its nature should be acceptable. In other words, I believe that the introduction of the word "knowingly or willfully" into such enactments is a serious defect. It offers a broad chance of escape to many who are really as guilty as the original adulterators. Hundreds of food products are sold, the sellers of which believe them to be adulterated, but the usual form of the law would allow them to escape, and, as a not inconsiderable portion of these articles is of foreign origin, the punishment of the originators would be impossible. Further, many conditions of food are brought about by the peculiar preferences of the buyer, or by exigencies of trade, and are not intended as adulterations, often being, indeed, done against the best wishes of the manufacturer. Thus, it is impossible to sell in this city uncolored pickles, and the color is given to them by the use of verdigris. I have recently found the amount of one-eighth of a grain of metallic copper in one pickle about three inches in length. The dealer from whom I obtained the sample told me that he would be very glad to stop altogether the use of this coloring (although I might state, in parenthesis, that there is no evidence that this amount of copper would be injurious), but he would be absolutely unable to sell the uncolored article.

So with the addition of coloring matter to mustard. A popular notion prevails that when ground it should have a yellow color, whereas pure mustard is nearly white. Yet the attempt to put upon the market the pure article would meet with failure, as the public would regard it as inferior. A very important phase of this question is of recent development. I refer to the use of food preservatives. Salicylic acid is now largely used, also boric acid and betanaphthol. With these substances there is not very good clinical evidence of their injurious character; they are not added with a view to deceive, and they do not take the place of any essential ingredient in the food, yet their addition to food is certainly objectionable; and as regards salicylic acid, sanitary authorities in various parts of the world have strongly condemned its use. For the issues just alluded to, there would have to be special provision, and in the effort to protect the community, unjust severity in restriction might be exhibited.

The absolute authority granted to health officers and health boards is worthy of some attention. Even in a community like our own, jealous of restrictive legislation, the local board is qualified to declare what constitutes a nuisance prejudical to the public health, and against this decision there is no appeal to a higher jurisdiction, and State and National boards assume to a great extent the same powers. In spite of the fact that it is a well-established practice, and, so far as our local board is concerned, has not resulted in any distinct injury, I hold it to be radically defective. No power should be given to any organization in civil government which is not subject to review before an independent tribunal, in the light of the facts of the science or art involved. It is not difficult to mention instances where the absolute authority has resulted in an unjust decision. The plumbing law governing Philadelphia is a case in point. So far as it is an inspection law it is serviceable, but so far as it presumes the direct and injurious action of sewer air, it is unreasonable. The causative relation between sewer air and infectious disease has never been demonstrated, and in the light of the careful investigations made into its chemical composition and poverty in organisms this theory must be abandoned. Very exact observations recently made have shown that the number of organisms in the air of unventilated sewers is less than that in the air of rooms and of many open places.

In the acts for the prohibition of the manufacture of artificial butter we have a magnificent example of this kind of sanitary legislation. There is no question that the main spring of this special legislation has been the self-interest of the farmer class, and the subserviency of the general run of legislators. Prohibitory oleo-margarine laws were passed for the same reason that prohibitory liquor laws are not passed, viz.: The influence of the class to be benefited. The oleo-margarine bill of this State originated in the State Board of agriculture, and I was in attendance at the meeting at which it was first broached, and succeeded, by addressing the board, in delaying the maturing of the bill, but at a later meeting it was approved and sent to the Legislature. With an ingenuity worthy of a better cause the framers of the bill entitled it an act to protect the public health, and thus made a special pleading for it. In the same way the National House of Representatives, by making the United States law a revenue measure, gave it a special permanence.

Under official encouragement and private enterprise, much work has been lately done in this country in exposing the various phases of food adulteration. The Massachusetts State Board of Health has been quite prominent in this field, and within the last year or so the chemists attached to the Department of Agriculture, at Washington, have published and freely circulated valuable reports. Such work reflects great credit on those engaged in it, but it certainly fails to reach the mass of the people, and produces a limited effect on the sale of adulterated food. The public at large take but little interest in a scientific report, and the examining chemists are not to be expected to enter upon a mission service based on the facts ascertained by them. There has been lately published, for instance, by the bureau at Washington, an extended report on the quality of the alcoholic liquors sold in this country. It shows adulteration and sophistication of the beverages in common use; but it is not likely that the knowledge will be utilized for the purpose of preventing these practices.

I have watched for a number of years the course of official measures for the prevention of food adulteration, and have come to the view that we must remodel our methods. We have now, what might be called the hide-and-seek system, by which the dealers are allowed to put upon the market compounds of unknown composition and character, and the officers of health are expected to search for and detect the fraud. This is waste of energy and divides the responsibility for the offence.

We cannot, I believe, get a fair adjustment of these important public problems on the basis of arbitrary restrictive laws framed by professional sanitarians and administered by mixed boards. We must reform entirely our system, and it is with a view of presenting a suggestion in this respect that I have given to this paper the rather pretentious secondary title. The remedy is to throw the responsibility entirely on those who prepare and manufacture food and drink.

This is to be by a system of inspection, and by entire publicity as to the composition of any article, whether food, drink, or medicine. I hold, as a fundamental principle, that no one should be permitted to manufacture secretly any article which is intended to be taken into the human system, and that no such article should be exposed for sale unless its composition is plainly stated or furnished to all who may request it. All places where food of any kind, beverages or medicines are prepared, should be subject to regular inspections by qualified officials. No plea of private right, reward for discovery, or business interest should be allowed to interfere with the application of this principle. The great mass of mankind are engaged in operations in which all the processes are known. The operations of banks, insurance companies, the transfers and investments of properties, are subject to official record, yet the important problem of the supply of pure food is dealt with in a way that would lead us to think that the rights of manufacturers and dealers are superior to those of the consumer. With a considerable number of food articles, such as meat, domestic fruits, vegetables, a general supervisory inspection would be all sufficient ; but with regard to articles sold finely ground or in packages, or in a state of mixture, definite statements of composition should accompany every package. It is singular to note that we may be said to show more care in the selection of food for our crops than for ourselves. Every package of fertilizer which is sold in this State must bear plainly printed on it a statement of the composition, according to an exact analysis. The dealer is obliged to pay for such analysis. There is an officer whose duty it is to revise such analysis, and a heavy penalty is attached to the sale of any fertilizer bearing a false certificate. The sale of mixed, or we might, perhaps, strictly say adulterated, food is permitted by the law in Great Britain under such a condition. Thus the framers of the law permitted the sale of coffee mixed with chicory, provided the fact of mixture and the proportion was clearly stated. Parliament has also lately, after careful discussion of the subject, permitted the sale of butter substitutes, if clearly stated to be such. In obedience to a supposed demand, various package foods, such as ground spices, are sold diluted with inert matters (ground cracker-dust, for example), but such articles must be distinctly labeled. By that particular perversion of international comity which permits one nation to be dishonest toward another, the same articles which are sold in England distinctly labeled as adulterated, are sold here as pure.

The regulation which I have suggested would be of great benefit in meeting the issue in regard to the use of food preservatives, and accessory matters which can hardly be called adulterants, yet which may be of serious moment if indiscriminately used in food. The most important instance of this at the present time is salicylic acid. This is now extensively used in the preservation of perishable articles of food. I have found it in six out of thirteen different samples of bottled beer, and in two out of eleven malt extracts. Its addition without notice to the consumer is unquestionably objectionable, and yet it would be difficult to prevent or punish it except by specific enactment, for there is no demonstration of its injurious action in moderate amounts. Even if it were proposed to prohibit its use in set terms by law, a conflict of opinion would be developed. Yet the addition of a substance having distinct physiological properties, and not in itself food, is an objection. The same may be said of boric acid, sulphites and the latest addition to food preservatives, beta-naphthol, or, as called in trade, hydro-naphthol.

A practical solution of the difficulty would be reached if every person using such substances was compelled to publicly acknowledge it by statement on the label.

A law requiring the composition of every medicine to be clearly stated on the label of the bottle or package would break up one of the greatest abuses of the present day, the sale of patent medicines, or nostrums. Through these articles a large amount of money is annually extracted from the pockets of the ignorant and unfortunate portions of the community, and whenever the composition of some vaunted remedy becomes known through any chance, it is found to be some well-known formula or a valueless mixture.

I have said above that I believe that the responsibility for the sale of adulterated food, drink or medicine ought to rest on any one who has dealt in it, whether knowingly or not. The grocer who sells noodles containing chrome yellow; the druggist who sells laudanum of a defective strength, whether manufactured by him or not; the bottler who puts up a salicylated or adulterated beer, ought all to be held responsible for the character of the articles. It should be made their duty to ascertain the standard of the articles they sell. Provision should be made in the law for punishing every person concerned in the sale of the food, from the original manufacturer to the retail dealer. The usual practice of introducing into food laws the word knowingly or wilfully, under the theory that innocent handlers are thereby protected, serves merely to protect the guilty parties, and to permit of escape under technicalities of the law.

These are, then, some of the points which present themselves as inviting discussion. The topic is too extensive for thorough discussion, and I have endeavored to present, in condensed form, an idea which I think is worthy of attention. There is, I believe, very little legislation which is more important than that which is calculated to ensure pure food, and yet the very magnitude of the issue may serve to mislead us. A writer has said, "O liberty! how many crimes are committed in thy name," and reading over the records of the action of official bodies in the past few years, I have often felt like saying, "O public health! how much injustice is wrought in thy name." A sound system of sanitary jurisprudence is still to be developed, and perhaps the discussion of the problem before this Society may constitute an effort in that direction.

———:o:———

Be careful how you convince your friend that he has made a mistake.

A PROBABLE CAUSE OF TYPHOID FEVER IN SUBURBAN RESIDENCES.

BY A. W. BIDDLE, M.D., OF CHESTNUT HILL, PA.

I would like to call attention to the fact that in many of our suburban residences, on being vacated in the fall, the water supply is turned off, and consequently all the traps become emptied, thus leaving a direct communication between the interior of the building and the cess-pool. Before re-occupancy in the spring the fires are started to drive away the dampness some time before the water is turned on and the traps filled, which fills the house with any accumulation of gas which may be in the well, owing to the increased temperature of the dwelling. The above facts may account for the odor of drainage which we so often find in houses that have been vacant, and it may also account for some of our apparently unaccountable cases of Typhoid which develop in the suburbs during the early spring, and which are usually attributed to city causes, and which you sometimes find in dwellings of unexceptionable drainage.

———:o:———

STATE SANITARY CONVENTION.

All persons who desire to attend the Convention of Sanitarians, to be held at Lewisburg, Pa., May 17 and 18, under the auspices of the State Board of Health of Pennsylvania, should apply for railroad certificates for reduced fare to the undersigned, stating which railroad will be used.

WM. B. ATKINSON, M. D.,
1400 Pine Street, Phila.,
Manager of Transportation.

———:o:———

Lady Mary Worthy Montague, born in 1690, introduced inoculation for smallpox from Turkey into England, and had her own daughter publicly inoculated for example's sake.

Special Reports.

REPORT ON A SPECIMEN OF PORK.

A subscriber in Mahanoy City thus writes to us:

"I send you by mail two specimens of *pickled pork*, one is *cooked* by boiling, the other *is as taken* from the pickle (or salt and water). Please examine the same and let me know the result of your investigation. There is at least ten ton of this class of meat in this borough."

P. A. Bissell, A. M., M. D.

The specimens were sent to Dr. L. Wolff, Demonstrator of Chemistry in the Jefferson Medical College and his report is appended.

Philadelphia, Pa., 333 S. 12th St.,
April 7th, 1888.

Dr. J. F. Edwards,
Annals of Hygiene.

Dear Sir:—In answer to your favor of March 10th, accompanied by several specimens of pork or bacon, some of which were in a raw and others in a cooked state, and which you requested me to examine, I submit to you the following report:

The pork or bacon appeared of the ordinary kind, but all the specimens contained in the fatty part thereof, peculiar stellate dark colored configurations which were in conglomerate deposits so dense at times that the figures above mentioned would run into each other.

With a view to determine their nature sections containing the dark stains were subjected to close microscopic examination, which revealed them to consist of elongated tubular pockets containing a reddish brown to yellowish brown amorphous pigmentary substance, surrounded by the usual fat cells. Variously treated with alkalies, acetic acid, boiling out the fat and soaking in ether, no organized structure was revealed by the microscope, that would explain the existence of any animal parasite.

The question of a parasitic origin of the stains being thus disposed of, a number of them were excised from the surrounding adipose tissue and treated chemically. They responded distinctly to the reaction for iron while they did not exhibit the characteristics of Haemoglobin, but proved to contain Haematin and Haematoidin.

To explain these terms for the benefit of those not familiar with them, I would state that the black stains such as presented themselves in these specimens of pork were not as surmised, occasioned by parasites, but proved to be the results of bruises or of beating the animals, which caused the blood to exude into the fatty structure, then gradually undergoing changes which are in man often noticed as black, blue and variously colored spots from similar origin.

Very Respectfully,

L. Wolff, M. D.,
Demonstrator of Chemistry Jefferson Medical College.

Thus while we find no evidence of parasitic disease in this pork, we do find that these poor animals must have been most unmercifully beaten before they were killed, which would not enhance their food value, to say the least of it, and it also demonstrates that a branch of the "Society for the Prevention of Cruelty to Animals," would find a good field for its work in Mahanoy City.

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SMALL-POX.

While it is never a wise policy to create any unnecessary alarm about the presence of disease that may tend to produce a state of unreasoning panic, yet it is the most foolish and dangerous policy to endeavor to conceal that which really exists.

The truth should be plainly told. The sensible American public rarely becomes panicky when the true nature of a threatened danger is properly understood ; it is only when they are unable to understand the nature and extent of what threatens them that they become unreasonably alarmed and easily fall into a state of panic.

Therefore, in dealing with the question of small-pox, we should clearly state that while there is no cause for alarm, as indeed there never should be in cases of threatened danger, yet there is ample reason for precaution. There are now more small-pox centres in various parts of the country than there have been for some years, and as this disease so readily spreads from one unprotected person to another, there is reason to fear an unusual prevalence of the disease if proper precautions are not instituted. In this city, despite the sensational reports in the daily papers, we have had less than thirty cases and only three or four deaths, certainly very little for a city of 1,000,000 people ; but, at the same time, just as an insignificant match may suffice to start the fire that will consume a whole city, so one single case of small-pox may be the means of decimating the greatest of populations. Therefore, while there is no cause for alarm, there is ample reason why we should exercise even more than usual caution.

Small-pox is the one disease against which we may have a sure protection, one at the same time as simple as it is efficacious. We are not discussing now the merits of vaccination, we are assuming, as every sensible man must and does, that a genuine vaccination is an almost absolute safe-guard against the disease. But, the vaccination must be *genuine*. Unfortunately the tricks of trade have stepped into the traffic in vaccine matter, and we have sophisticated vaccine points as we have sophisticated drugs and groceries. Therefore, does it behoove the physician who desires to confer a real immunity upon his patient to be careful in his selection of material.

It may be accepted, we take it, as a cardinal rule, to which there are few exceptions, that any one who has not been successfully vaccinated within a period of five, or, at the most, seven years, is in danger of contracting the disease. Though one may have been vaccinated last year, when it " did not take," this is no reason that the system is not now in a susceptible condition, and the trifling operation should be repeated. To one who would enjoy a thorough immunity this should be done whenever there is any small-pox about, or indeed, it should be resorted to annually, until " *it does take*," when, as said before, we can then feel safe for a period of from five to seven years.

To physicians, we would emphasize our caution about great care in the selection of vaccine matter. If that from the heifer be used, there are, of course, many reliable establishments, but, as we happen to have a personal knowledge of the reliability of the matter sent out by the vaccine farm at Marietta, we have admitted it to a place in our advertising pages, that physicians may, in this time of great demand for vaccine matter, have something to guide their choice of material.

:o:

CONNECTICUT STATE BOARD OF HEALTH.

We are indebted to Dr. C. A. Lindsley, the Secretary, for a copy of The Tenth Annual Report of the Connecticut State Board of Health, A vast amount of interesting matter is published in this report, all testifying to the energy, capability and industry of the Secretary. Such reports make valuable reading, and should be carefully perused by all who are interested in hygiene.

The Annals of Hygiene,

THE OFFICIAL ORGAN OF THE

State Board of Health of Pennsylvania.

PUBLISHED MONTHLY.

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Editorial.

HOUSE DRAINAGE No. 2.

To continue from where we left off last month, knowing, as we now do what "sewer gas" really means, let us pause for a moment and inquire what are its effects. Is it capable of producing disease in those who inhale it? Broadly speaking, yes; specifically, no. That is to say, in order that the air from a sewer may produce any particular disease, it must contain the germs of that particular disease, but the gases resulting simply from organic putrefaction, what we now know as "sewer gas," will produce a condition of general ill-health, a "run down" condition in which the victim will be very susceptible to any disease to which he may be exposed. What the public understands as "malaria," that illy-defined, vague, uncertain collection of symptoms, with headache, nausea, loss of appetite, disturbed sleep, and so on, is frequently caused by the respiration of an atmosphere charged with sewer gas. Of this there can be no doubt. We have neither the space, nor is it necessary that we should here enter into a lengthy discussion as to whether sewer gas is injurious to health or not. When the school teacher is explaining the principles of multiplication to the child, it is not necessary for him to go into an argument to demonstrate the fact that two and two make four, because this is a *fact* and simply needs to be stated. So when we come to the discussion of hygienic principles there are certain *facts*, well recognized and admitted *facts*, that may be stated merely, without adducing any arguments to demonstrate them, and one of these facts is that "sewer gas" cannot be inspired without proving detrimental to health. Now we know what sewer gas is and we also know that it is detrimental to health. But you may say that we know all about this, why go over the ground again. Because recent developments in this city have brought to light the fact that it is the rare exception when a house is found whose inmates are not breathing an atmosphere more or less charged with sewer gas; and we see no reason why this same condition does not exist in all our cities. This is a startling statement to make, but it is disastrously and fatally true, as we will bring unquestioned evidence to prove in the next and subsequent issues.

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WINES AND LIQUORS.

In our work of investigation of disease producing agencies we have been confronted with some of the most startling information in reference to the various wines and liquors that are offered to the public that it is possible for the mind of man to conceive. We are always ready to preach the doctrine that the use of alcoholic liquors is inimical to health, but when we learn, as we do, what vile compounds, what potent drugs, what sophisticated mixtures are offered to the public under the names of brandy, whiskey, gin, and the various wines, we stand aghast at the nature of the liquids our neighbors are innocently putting into their stomachs; innocently, we say, because they are totally ignorant of the true nature of the compounds they drink. We do not desire to be sensational, we are not writing that we may inflame the imagination, we have no wish to *scare*, but we simply wish to state that we have in our possession certain information in regard to the manufacture of alcoholic liquors never before made public, that, based upon this information, we have instituted a systematic series of investigations, and that we will, from month to month, during the coming year, publish information that will do more to check intemperance and favor abstinence than than all the legislation from the days of Adam to those of Francis Murphy. We do not, in our remarks, refer to "*rut-gut*," so called, to the liquor that is sold in "groggeries" to the poor, but our exposure will be of interest to the millionaire who can afford to and who does buy only the highest priced brandy and whiskey, and who fondly, but delusively believes that he is securing a pure article.

We are in possession of the "*tricks of the trade*," so to speak; we know that so-called liquor *importers* are in reality liquor MANUFACTURERS, we know how and why they manufacture and we intend to tell; we know something about the inside history of *so-called* Cognac, and it is startling to say the least. We have derived the information, and, as we have said, we have instituted investigations to corroborate this information, and with our next issue we will commence the publication of the strongest temperance arguments that have ever been advanced. Again, in conclusion, this is not sensation, it is a promised exposure of the liquor traffic such as has never before been made.

MILK IN NEW YORK CITY.

The New York State law creating the milk standard was passed in 1885. This declares milk to be adulterated if it contains more than 88 per cent. of fluids or less than 12 per cent. of milk solids, of which 3 per cent. shall be fat. Inspections in 1886 showed that 3 per cent. of the milk shipped by farmers, and 8 per cent. of that sold by peddlers, was adulterated. In 1886, 1½ per cent. of the milk shipped by farmers was found to be adulterated and 5½ per cent. of that sold by peddlers, while 9 per cent. of that examined in stores was below the standard. Since September, 1887, the inspection showed that not more than 1 per cent. of the milk received in the city from the farmers of the State is adulterated. The dealers are now generally the guilty parties according to the *Commercial Inquirer.*

:o:

THE HUMAN BREATH A POISON.

At a recent meeting of the Academie des Sciences (of Paris), Professor Brown-Sequard referred to some experiments he had conducted with a view to determine what, if any, were the poisonous effects of the human breath. In condensing the watery vapor coming from the human lungs he obtained a poisonous liquid capable of producing almost immediate death. This poison is an *alkaloid* (organic), *and not a microbe* or series of microbes, as might have been imagined. He injected this liquid under the skin of a rabbit, and the effect was speedily fatal. In conclusion, this eminent physiologist said that it was fully proved that respired air contained a volatile poisonous principle far more dangerous than the carbonic acid, which was also one of its constituents, and that the human breath, as well as that of animals, contained a highly poisonous agent.

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If Dr. Jaeger had contributed to the world nothing but his Camel Hair Blankets and Pillows, he would have conferred an inestimable boon upon suffering humanity. Nervous, excitable, restive, headachy, people, who hardly know what it is to have a good long night of sound, restful slumber, are amazed at the soothing, quieting influence of these unique articles of bedding. The enormous waste of magnetic and electric forces through the conductive properties of the ordinary cotton or linen bedding is prevented by the ***non-conductive*** animal fibre of the sanatory woolen and camel hair sheets, blankets, pillows and pillow cases of the Jaeger system.

Dr. Jaeger expressly calls attention to the peculiar property of the camel hair of these blankets and pillows ("long known in the East") which renders them "soothing to the nerves," and "the sleep which they induce," "more quiet and refreshing" than that induced by the "coverlet of sheep's wool." He, therefore, thinks they are especially to be recommended to nervous persons and sufferers from sleeplessness.

The Camel Hair Blankets and Pillows are all in natural color and have a soft and fur-like feel. The sheep's wool blankets can be had in a variety of colors, ***all Sanitarily Dyed.***

It is impossible to set forth all the excellent features of these unequalled goods without seeming exaggeration. To be appreciated they must be seen. And, if once used, they will never be relinquished for any other.

Catalogue and price list on application.

SCRIBNER & SULZER.

Notes and Comments.

COMMON-SENSE PHILOSOPHY OF VENTILATION.

It takes a tremendous force (says the *Sanitary Era*) to send an iron cannon ball through an iron armor plate of equal thickness. Why? Because the material to be passed through is as dense as the material that is to pass through it. Suppose, then, you wish to drive air through air. Is not the target to be penetrated here also as dense as the missile? In practice it is more so, by the difference in temperature required for a ventilating draft. The flue is your gun, the heat is your gunpowder, the air is your ball, and how are you going to shoot it through the material still denser than itself, above the chimney muzzle, without a large proportion of power? It is like shooting with thistledown; you could perhaps drive a bullet farther through wood than thistledown through air with the same force. Air is, however, still worse as a missile, because it is not cohesive, but evasive.

Is it, therefore, impossible to give rapid motion to air without great force behind it? No; the secret is to get it on wheels, or, rather, to roll it into rolling masses. Once in this condition the rolling masses are so delicately balanced that the lightest impulse sustained will keep them rolling forever, and with increasing volume forever, like a rolling snowball; and the larger their volumes become, the easier, faster, more powerfully they will roll. Vortex motion is the law of motion for gases, otherwise the atmosphere would lie becalmed and stagnant, in spite of the sun.

But can we produce vortical motion easily in air? Nothing easier, when you know how. It is simply to shoot something swiftly through it. Shoot a column of water up through the centre of a flue, and it will draw whirling masses of air after it. Shoot a flame into the flue, by its own ascensional rarity, and the effect will be the same; and if conditions be properly adjusted, a very small flame will propagate increasing vortical motion with every added inlet of air. This is a matter not of theory, but of proof, both on the experimental and the practical scale.

Every one knows how a balloon filled with the gas we burn, though perfectly cold, shoots up in the air like a shot from a gun. Increase its rarity by the 2,000 degrees of its heat in a state of combustion, and what sort of a shot will it make? Shot up through a flue in that condition something will have to give, and something follow in its wake. But if it be a very small shot, the elasticity of the air will take up the displacement, unless the rolling motion be initiated; and that is to be secured by certain proportions in the flue, and especially in its throat, which good chimney-builders (if there are any left) practice without knowing why.

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FAIRCHILD'S PEPSIN.

There are drugs that are valuable and there are drugs that are worthless. This proposition, simple as it may seem, has a world of meaning behind it. It means that two drugs carrying the same name may be diametrically opposite in their therapeutic effects, and that it will not do for us to prescribe a drug simply by name if we hope (as of course we do) to derive the greatest and best therapeutic effect therefrom. We must know whose manufacture we are using, and we must be sure we get the best. Among physicians, as well as amongst the drug trade generally, the house of Fairchild Bros. & Foster has for a long time enjoyed a reputation for the excellence of their preparations, and for the conscientious manner in which they conduct their business. This is not fulsome praise, but a candid statement of what we know to be true. Now, in this connection we are pleased to note (because we believe we are doing our readers a service thereby) that Dr. William Murrell, of London, *voluntarily* says that, having carefully tested all the pepsins of which he had been able to obtain samples, he believes "Fairchild's" to be the best. This is great, and, we believe, worthily bestowed praise. In these days of almost universal dyspepsia, pepsin is a drug that is greatly sought after, and as a natural sequence there are innumerable makes of pepsin to be had. But, to conclude as we began, there are pepsins that are valuable and there are pepsins that are worthless, and we must be particular to use only those of the former class, else our expectations will not be realized.

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A RECEPTION TO SURGEON-GENERAL HAMILTON.

On the evening of April 16, Dr. John B. Hamilton, the distinguished Supervising Surgeon-General of the Marine Hospital Service, was handsomely entertained at dinner by Dr. Benjamin Lee, at his residence in Germantown. There were present to do honor to the guest of the evening Drs. P. H. Bailhache, of the Marine Hospital Service; Ford, President of the City Board of Health; Dudley and Edwards, of the State Board of Health; Medical Inspector W. B. Atkinson, M.D.; and Mr. Lee, brother of our genial Secretary. The following witty menu was prepared for the occasion by Dr. Lee:

IRREGULAR MEETING AT THE RESIDENCE OF THE SECRETARY.

ORDER OF BUSINESS.

I. Reception of Surgeon-General Hamilton.
II. Discussion of the following subjects:
  1. Bivalves from a sanitary standpoint.
  2 The medicinal virtues of Asparagus.
  3. Fish as brain food.
  4. Immature Meats and the use of salts of copper in coloring vegetables.
  5. The value of Pancreatic Preparations.
  6. Spt. Sacch. Jam. Opt. as an aid to digestion.
  7. The Chicken Coop as a promoter of Health.
  8. Practical experiments on Tyro-toxicon and Oleo Margarine.
  9. The adaptation of Freezing Mixtures to the preservation of lacteal fluids.
  10. Adulterations of Tea and Coffee.
  11. The pernicious effects of the use of Tobacco on the young.

A most enjoyable evening was passed by all in Dr. Lee's hospitable home.

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HALF HOLIDAYS.

The belief is general that every business, professional, or working man or woman, in summer at least, deserves and needs to be allowed to enjoy the privilege of a weekly half holiday. Progressive business men, whether philanthropic or not, agree that the granting of such a privilege does no injury to trade, but rather by its beneficial effect upon the general business and labor health, tends to clear-headedness and renewed working vigor, which more than pay for the slight loss of time. In every large city, and in almost all of the larger towns, the early closing movement received a boom last season, and indications point to a more general adoption of the weekly half holiday during the coming season. A large portion of the stores begin the half holiday early in May, and many of them close during the summer an hour earlier on the other week days. The Pope Mfg. Co., of Boston, has published a beautiful lithograph of unique and artistic design, suitable to display in door, window, or office, announcing the hour of closing. By an arrangement of stickers any hour can be given. The company will present one of these lithographs free to any early closing store, or will send one to any person mentioning this journal, upon receipt of a two-cent stamp to pay postage.

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DAMAGES FOR DEFECTIVE HOUSE DRAINS.

A case of some hygienic and public importance came recently before Mr. Commissioner Kerr in the City of London Court. Two ladies sought to recover £25, damages sustained by them by reason of the defendant's misrepresentations as to the state of the drainage at the house occupied by them as tenants at a rental of £90 a year. It was stated for the plaintiffs that a distinct assurance was given either by the defendant or his agent that the drains were in perfect order; but soon after the plaintiffs entered into possession they discovered that the drains were defective. Some repairs were made, and then came a plague of rats, as many as twenty-two having been killed in a fewer number of days. When complaint of this was made to the agent, he philosophically replied that "that they would go away in due course." It was also stated that as the result of the insanitary state of the house the plaintiffs' boarders became ill and left, and the plaintiffs had suffered loss to the extent of the sum claimed. Mr. Commissioner Kerr recognized the claim, and gave judgment for the plaintiffs for £10, with costs on the higher scale.

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ALCOHOL AND HEART DISEASE.

Dr. George Harley ends his lectures on the effects of moderate drinking upon the human constitution with the following conclusions: 1. That alcohol, when indulged in, even well within the limits of intemperance, has a most prejudical effect on heart disease. 2. That certain spurts of muscular exertion act most deleteriously on all forms of organic cardiac affections. 3. That mental excitement is a cause of rupture of atheromatous blood-vessels. 4. That a mere extra-distension of a stomach by wind may suffice to fatally arrest a diseased heart's action. The knowledge of these facts has for some years past led me to make it an invariable rule to impress upon all patients laboring under diseases of the circulatory system, who desire to minimize the effects of their complaints and ward off as long as is possible the inevitably fatal termination, to pay strict attention to what I call the following three golden rules: (1) Take exercise, without fatigue; (2) nutrition, without stimulation; (3) amusement, without excitement.

:o:

CLOTHING.

According to the *British Medical Journal,* Mr. Pye Smith read a paper recently before the Sheffield Medico-Chirurgical Society, in which he said that fabrics manufactured from the wool of animals were greatly to be preferred for garments to those made from cotton or other vegetable fibre, being much superior as regards conduction of heat, absorption of moisture, porosity, weight, cleanliness, natural coloring, inflammability, strength, softness, flexibility, elasticity, and durability. Their roughness of surface was advantageous except in the rare cases in which even the finest varieties caused unbearable irritation of the skin. Special stress was laid on the value of socks with a separate compartment for each toe as a preventive of corns and deformity of the toes.

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NEW YORK'S CITY HALL.

The mayor of New York City has been obliged to temporarily abandon his office that the sanitary defects therein may be remedied. The City Hall was built long before the Manhattan Water Works were constructed, and without any reference to water supply or drainage. A rain-water cistern out in the southwest corner of the park furnished water for fire purposes, and drinking water and toilet water were supplied by means of the primitive bucket. Such a thing as a sewerage system was an unthought of matter. The existing sewer and drain pipes are said to be arranged in as near defiance of all sanitary rules as was possible. It is a series of patchwork, part brick, part iron, and part clay. Rat holes and loose and broken joints abound, and sewer gas permeates the whole building.

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THE HUMAN BODY IS AN ARMY.

Mr. Huxley has very aptly compared the human body to an army:

"Of this army each cell is a soldier; each organ a brigade; the central nervous system headquarters and field telegraph; the alimentary and circulatory system, the commissariat. Losses are made good by recruits born in the camp, and the life of the individual is a campaign, conducted successfully for a number of years, but with certain defeat in the long run," and just as good discipline will postpone the defeat of an army, so will correct living, in accordance with the teachings of hygiene, delay the inevitable defeat of the individual to the latest possible moment, and make his campaign one of pleasure rather than of sorrow.

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SCHOOL FOR MARRIED WOMEN.

I sometimes think (says *Bab*) that I would like to open a school for the education of married women—teach them how to keep their husbands. I think American women, more than any others in the world, need this school. The Englishwoman, when she keeps her husband, does it because she is a fine animal; the Frenchwoman is clever enough to combine the material and intellectual, but the American woman, having been petted until she is quite spoiled, thinks the man once gained is always owned, and does not believe the coquettish wiles used by the maiden at all necessary for the wife. Poor little donkey! What a hard lesson she has to learn, or else what a hard life there is before her.

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HEART DISEASE AND MARRIAGE.

With regard to the question whether young girls affected with an organic lesion of the heart should be allowed to marry (*British Medical Journal*), Professor Jaccoud, in opposition to the views expressed by Professor Peter, believes that no absolute rule can be laid down. If the valvular lesion has never produced disturbance, then marriage is permissible. If symptoms of asystolia (especially in lesions of the mitral valve) have been observed, then there is considerable risk in marrying. Pregnancy would be very dangerous, on account of the pulmonary congestion which it would cause.

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SCOTCH OATS ESSENCE.

In the April number of the *Druggist's Circular and Chemical Gazette*, for advance sheets of which we are indebted to the manager of that excellent journal, Dr. R. G. Eccles, of Brooklyn, gives an account of his analysis of a nostrum known as "Scotch Oats Essence." He declares that the preparation is about one-third alcohol, and that each ounce of it contains nearly ½ gr. of morphine, notwithstanding the fact that it is "pledged to destroy the morphine craving and 'free the victim from his terrible bondage.'"

THE ANNALS OF HYGIENE.

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COMMUNICATIONS.

ANNUAL ADDRESS.*

BY HON. S. T. DAVIS, M. D.,
OF LANCASTER, PA.

THE IMPORTANCE OF A THOROUGH ORGANIZATION OF THE STATE IN THE INTEREST OF THE PUBLIC HEALTH, UNDER THE AUTHORITY OF LAW

When requested to read the annual address before this convention, it occurred to me that it would be an easy matter to say something on a subject of such vital interest to all our people.

But, when I came to face my subject and crystallize my thought and give the impressions left upon my mind during a running fight against disease and death for the past quarter of a century, I began to feel the weight of the responsibility resting upon me, and my inability to do justice to a subject upon which so many able men have spent their lives. However, I take comfort in the thought that a good story may be told again and truth will bear repeating. Until lately, sanitary conventions in Pennsylvania were almost unknown except in large cities, or where some local epidemic bearing pestilence and death stared our people in the face and they were compelled to assemble for self-protection.

Our forefathers declared that "all nations or people are entitled to certain inalienable rights; among these are life, liberty and the pursuit of happiness." Life was the first and most important right, and it is to be supposed that their idea was that the first great duty of government was to protect and prolong the lives of its subjects.

No doubt, the protection mentioned was against foreign foes. But who will deny that impure air, water, food and raiment are not more deadly enemies and the prime factors in shortening and rendering miserable the life of man.

The human form by the hand divine was wound up for one hundred years, and, with proper attention to hygienic laws, the average age may be prolonged far beyond its present length.

To realize the necessity and importance of more rigid sanitary regulations throughout our country, we need but glance at a few of the most prominent defects in our mode of life. It is but a few hundred years since civilized man brought to this country his virtues and his vices to blend them with the customs of the untamed savage. Let us look at that untutored savage, the sole occupant of this beautiful country. He was a specimen of physical manhood such as our own times scarce can furnish. His form erect, his body perfect, his bosom ever heaving with healthful joy, every nerve that thrilled, every muscle that twitched gave pleasure, so perfect was his health, he never knew that he had a stomach, except when hungry, his teeth were as pearl and never knew decay.

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*Delivered before the State Board of Health of Pennsylvania, at Lewisburg Pa. May 17th.

We naturally ask what was the clothing for such a body? and we see a light covering on the head, sandals or moccasins, whose broad soles formed ample covering for his feet, left corns unknown. His limbs and body to the waist were clad in loose breeches, while a gown or blanket of skins hung from his shoulders.

He lived in tents or wigwams in winter and in summer slept under the silent heavens with the forest leaves rustling above him and God's pure air filling his healthy lungs.

He subsisted on fish and game; fowl of every wing and beast of every kind were his, and he sought no greater happiness than the fascinating exercise of capturing them. His heaven was a happy hunting ground. He was not confined in a furnace-heated room eight months in the year, nor perplexed with a note in bank or a mortgage on his homestead, nor did he sit cramped over a desk till fingers and brain were paralyzed with mental toil.

The foregoing picture of an Indian I have seen painted in history. What I shall say of the young man of our own day I have from observation. He may be seen on every street corner from 11 a. m. to 3 a. m. the next morning, smoking cigarettes and decorating sidewalks with liquid tobacco. His shoulders are stooped, face pale and care-worn, eye expressionless, his step is uncertain, either from soft and flabby muscles or intoxication, or both—yet he would be graceful. A fashionable hat adorns his head and, although his feet are large, they are crowded into shoes two sizes too small. The toes are piled one on top of the other and adorned with painful corns. Tightly fitting trowsers cover his limbs and abdomen. They are almost met at the waist by a vest so tight that it interferes with the expansion of his imperfectly developed lungs. His collar fits so closely around the neck that, when he assumes the stooping posture, the face becomes livid from the compression of the jugular veins which stand out protected by neither fat nor muscles. His cadaverous hands are encased in fashionable colored kids, and between his thumb and finger he swings a cane. This specimen of humanity, which is typical of a large class of the young men of our day, has been reared in the lap of luxury. His dear mama's society engagements were so pressing and important when he was a babe as to render it impossible for her to give her offspring a mother's care and a mother's nourishment, consequently the services of a nurse, the bottle of cow's milk, all kinds of artificial foods, cordials, soothing syrups and antispasmodics were brought into requisition. Thus, with seldom a mother's care, he lived through indigestion and diarrhœa from overfeeding and survived the effects of the vile compounds used for their relief. Later on he ran the guantlet of the common school and received the baneful effects and deleterious influences incident to breathing vitiated air poisoned by exhalations from the lungs in overcrowded rooms. When out of school, if in a city, the opportunities for exercise in the open air were limited to one or two alternatives—kick the dog in the back yard or run the risk of arrest by playing in the dusty streets. By the time our courtier has completed his education and is supposed to be ready to assume the duties and share the responsibilities of citizenship, is it any wonder that nine-tenths of such persons never become even atoms for good in the great struggle for the "survival of the fittest."

What can be said of our female children in the same affluent circumstances? By the time they have barely arrived at the age of puberty their education has been finished and they are ushered into society, frail, nervous and undeveloped, utterly unfit to fill that noble sphere for which their Creator intended them; the future mothers of our race.

Most of the same violations of the laws of health apply as well to the laboring classes who earn their daily bread by the sweat of their brow and in youth, at the expense of their health, sad to say, the only bank account they possess; their stock in trade. True, they have sufficient physical exercise, but too often in overcrowded, ill-ventilated factories and mines from ten to twelve hours each day and of necessity compelled to sleep in over-crowded tenement houses at night; and right here let me observe that while I rejoice in my great country, its broad acres, rich mines and noble institutions, I am sad and discouraged when confronted with the startling fact that hundreds of thousands of poor children in these United States are not only deprived of a common school education, but of their health and find early graves from overwork, improper food and breathing vitiated air. The importance of pure air and plenty of it can not be estimated too highly. Oxygen is the great purifier of the blood in the animal economy and it finds its way into the system through the lungs. The exhalations from the same organs contain effete poisonous elements detrimental to health. Heretofore carbonic acid was considered the poisonous constituent of the human breath. But at a recent meeting of the Academy of Sciences of Paris, the celebrated scientist, Prof. Brown Séquard, reported some experiments he had but recently conducted with a view to ascertain whether carbonic acid was the only poisonous agent contained in the breath. By condensing the watery vapor coming from the lungs he obtained a poisonous liquid capable of producing almost immediate death. This poison he found to be an organic alkaloid and not a microbe. By injecting the liquid under the skin of a rabbit, immediate death ensued.

While impure air has much to do with the public health of a people, it cannot be doubted that impure water, as a means of communicating disease, is far more deleterious and thorough in conveying disease germs. The air we breathe is inspired and in a few seconds it is expired. Different with water, which is taken into the system, passes through the multitudinous processes of absorption, digestion and secretion, requiring several hours before elimination takes place. One or two of the many thousand authenticated instances in which the germs of typhoid fever were communicated through drinking water will illustrate the possibilities of such infection. I have selected two cases, one of the village of Lausanne, near Basle, Switzerland, the other nearer home, that of Plymouth, Pa. In the first of these outbreaks, the poison of typhoid fever mixed with drinking water was transmitted through nearly a mile of porous earth. The investigation was exhaustively made through Dr. A Hagler, of Basle, who traced the source of the poison to an isolated farm house on the mountain ridge, where an imported case of typhoid fever, followed by two others, occurred shortly before the outbreak. A brook which ran past this house received the dejections of the patients and their linen was washed in it. This brook was employed for the irrigation of some meadows near the farm house, and the effluent water filtered through the intervening mountain to a spring, the water of which was used by all the houses in Lausanne except six, which were supplied with water from private wells. In these six houses no case of fever occurred but scarcely one of the others escaped. No less than one hundred and thirty people, or seventeen per cent. of the whole population were attacked besides fourteen children, who received the infection whilst at home for the holidays and afterwards sickened on their return to school. The passage of water from the irrigated meadows to the spring at Lausanne was proven by dissolving in it at the meadows 18 cwt. of common salt and then observing the rapid increase of chlorine in the spring water. But the most important and interesting experiment consisted in mixing uniformly with the water 50 cwt. of flour, not a trace of which made its way to the spring, thus showing that the water was filtered through the intervening earth and did not pass by an underground channel. The sad story of the Plymouth epidemic, familiar to most of us, is one of the most remarkable in the history of typhoid fever, and should teach us some important lessons, if their importance shall be judged by their cost in human life, distress and suffering. Imagine a swift, rippling mountain stream, one of the sources of water supply of that ill-fated town. A lonely house on one of its banks between the third and fourth reservoirs. In his valuable report upon the epidemic, Dr. Lewis H. Taylor of Scranton says: "A man returned to his home from Philadelphia and for many weeks was seriously ill with typhoid fever. Early in March he was convalescent and out of bed. A relapse occurred about the middle of March and he was very sick. On March 16th and 17 he had hemorrhage from the bowels of so severe a type that on the 18th his life was despaired of even by his physician. He however rallied, convalesced in April so that his physician discontinued his visits on April 12th. During the course of his illness the dejecta passed at night, without any attempt at disinfection, were thrown out upon the snow and frozen ground, toward and within a few feet of the edge of the high bank which slopes precipitously down to the stream supplying the town with water. The nurse in charge states explicitly that in emptying the chambers at night she did not stand on the porch to throw out the contents, but stepped down some distance and threw them towards the creek. If she stepped but a few feet away from the porch she would empty the excreta within twenty-five or thirty feet of the edge of the stream. The dejecta that passed during the day were emptied into a privy a little further back the contents of which lie almost on the surface of the ground. These dejecta were thrown out from time to time until the accumulation no doubt equalled the daily dejecta from many such patients. They remained innocuous upon the snow and frozen ground until some time between March 25th and April 1st, when they were washed into the stream and the third reservoir.

March 26th was the first day upon which any considerable thaw occurred. Upon the evening of this day the Superintendent of the water company visited the reservoirs to ascertain whether it would be allowable to discontinue the pumping of river water. He found the first and second reservoirs almost empty, while the third was filling rapidly. This water with the accumulated typhoid fever poison was discharged from the bottom of the third reservoir, ran down to the second, on to the first and was thence distributed to the town between the 25th of March and the 5th of April." It is scarcely necessary for me to state that in a short time, during the latter part of April, many hundreds were stricken down with the dread disease. In one particular day it is said two hundred new cases were reported of a population of 6.000. Over one thousand people were affected, of whom over one hundred died. From the same report I glean the following proof, positive that it was the reservoir water and not the spring or well water that poisoned these people: "Near the extreme Southern end of Plymouth, upon the banks of Coal street Creek, a house was found in which hydrant water was used, and in this house two persons were sick with the disease, while in another, in which well water was used, situated about sixty feet away, all the inmates were free from the disease. A little farther to the North of these two houses there was found on Temperance Hill eleven families using well water, and no case of typhoid fever. On the upper side of Lee street almost every family using hydrant water was affected, whilst those living on the lower side of the same street were all supplied with well water and none of them were sick. Upon Welch Hill a community of several hundred persons was found supplied exclusively with well water. There were but six persons sick on this hill and these were all persons who had been working in Plymouth in the daytime and drank water from the hydrant." Thus I might cite hundreds of instances in which the germs of typhoid fever were conveyed into the system through drinking water, but the illustrations given should be sufficient to amply satisfy those who make diseases and their causes a study and induce laymen to take more interest in the public health. We now come to the consideration of a subject which is, in my opinion, more detrimental to the public health than all other influences combined, not even excepting the use and abuse of narcotics and stimulants. I refer to hereditary diseases. More people die of consumption annually in the United States than from all the epidemic diseases combined. This may be a startling assertion to some, but it is nevertheless true, and statistics will bear me out in making the statement.

Modern science, which has cast illumination into so many dark, dismal and unknown corners of Nature's laboratory, has shed new and still more lurid light on the words of the Hebrew Scriptures: "The iniquities of the fathers shall be visited on the children unto the third and fourth generation." On this subject Sir Henry Holland says that "no organ or texture of the body is exempt from the chance of being subject to hereditary disease." In the consideration of this all-important factor in its relations to the public health and welfare of our people, my only regret is that time will not permit me to do more than call attention to more than one or two points which may be of interest. There is scarcely a county in any State in the United States in which there is not an organization known as an Agricultural Society. Every State publishes an anual report. The State of Pennsylvania publishes for free distribution twenty-five thousand six hundred copies annually. The National Government publishes three hundred and ten thousand copies, at an annual expense of over two hundred thousand dollars. Some of these reports are marvels of beauty and thoroughnes and show the imprint of master minds and the expenditure of large sums of money in the prosecution of experiments and illustrations of scientific conclusions, in order that, no matter how humble and unpretentious the farmer, if he can but read the English language, he can become the possessor of valuable information only obtained by large expenditures of money and diligent research, aided by tabulated reports from all sections of the country. Why this|well-organized, systematic effort on the part of States and the National Government to disseminate information? What do these voluminous reports contain? Let us see. The best methods of tilling and fertilizing the soil. The most productive, healthy and least liable to the ravages of insects and climatric changes of all cereals, fruits and vegetables. But the most important and expensive of these reports is that taken up by methods to prevent diseases in domestic animals and fowls, and preserving with jealous care the pure blood of the respective strains. And yet a surprisingly large percentage of those most deeply interested and financially benefitted by this most praiseworthy dissemination of invaluable information for the people do not hesitate to give the hand of a son or daughter in marriage without a moment's investigation of the family history as regards the tendency to the existence or non-existence of hereditary diseases. Social standing (which is a jewel) the amount of real and personal property and bank accounts usually settle the matter in favor of the plaintiff. And only recently the bill befóre Congress to establish a National Bureau of Public Health was opposed by no less a personage than the Hon. Surgeon General of the Marine Hospital Service on the ground "that things are well enough as they are and that sanitary work can best be done by the Treasury Department."

"Consistency, thou art a jewel," but in this case, when the most important interests of a great people are concerned, inconsistency wears the diadem and it is to be hoped that the false light may at some future time aid true philanthropists in causing at least as much interest to be taken in the welfare of the American people as is now taken in domestic animals. Scientific investigation has long since established the undeniable fact that all matter organic or inorganic, animate or inanimate, is governed by certain unerring laws, which under like circumstances, produce like results.

That the disease germ of cholera will produce cholera in persons exposed to and susceptible to its influence; likewise the germ of yellow fever, small pox, measles, whooping cough, scarlet fever or diphtheria will produce their like and assume the characteristics belonging to their special genera as faithfully as the laws of civilization produce their uniform results.

For over thirty years the principal object of my life has been to learn how to recognize, cure and prevent disease and at the same time earn an honest living at the "Doctor trade."

During these long years of almost constant toil by day and night I have had my eye and ears open and possessed myself of any information, remedy or device that gave the least evidence of merit for the relief of human suffering. In this conflict between the elements of disease and health, I have been in the thickest of the fight and took notes from which I deduce the following axioms:

First. An ounce of prevention is worth more than ten times ten pounds of cure. That when I left college I was under the impression that there was no excuse for any person being sick long where the proper remedy was at hand for the particular disease under treatment. Now if I can place my patients under the very best hygienic conditions, they seldom need any remedies more potent than placebos in the great majority of acute diseases. That, if when I began the practice of medicine, I had invested the same amount of capital and employed the same amount of enegy during all these years in the prevention of disease and the instruction of the masses on the importance of observing the laws of health, I would have accomplished more good and been the means, indirectly, of preventing more human suffering than all my hundreds of thousands of individual efforts at the bed-side. That upon the health of a people depends their happiness, power and usefulness. That cleanliness is truly next to Godliness, and that the true degree to which a people have advanced in strictly meritorious civilization may generally be arrived at by ascertaining the attention they give to the protection of the health and the prolongation of the lives of their citizens.

The history of the dark ages defines and points out, in a manner too clear to admit the possibility of misunderstanding it, the duties of the present. We are told they lived in filth, were poisoned by their own excretions and perished by the thousands.

Between March and July, 1348, there perished in Florence alone more than one hundred thousand persons from the "black death." Geneva lost forty thousand, Naples sixty thousand, and Venice seventy thousand in the short space of four years, and there perished in the whole of Europe not less than forty millions of people poisoned by the filth which they allowed to accumulate about themselves. By forced attention to cleanliness the "black death" has been quite banished from Europe, but other filth diseases still prevail in both hemispheres. From 1852 to 1859 the annual death rate from typhoid fever in Munich, for every ten thousand inhabitants, was 24.2. After the establishment of that world renowned hygienic laboratory at Munich, and as a result of the investigations pursued and the dissemination of sanitary laws, the death rate from typhoid fever has decreased until, in 1884, it was only 1.4 per ten thousand inhabitants. Nearly every civilized country is now manifesting unusual interest in the lives of their subjects. But, that all may be satisfied that there is still much to be done in sanitary work, I need only call attention to the fact that the statistics of New York City show that one-half of the population furnish three-fourths of the deaths, and an inquiry into the conditions under which the sickly half live shows that filth is unquestionably the prime factor in the operation.

In some of the crowded tenements of the city, says one observer, "the mortality reaches to fifty-five in a thousand annually, or more than forty more than would be the case if the conditions of life would be healthful." This does not present the whole case, since there are fourteen cases of sickness for every death, making five hundred cases of unnecessary illness, or half the entire population sick in consequence of filth ; and let me here remark that our own city of brotherly love is very little better. The average of life in the United States is but a fraction less than forty years ; but the filth of our two largest cities, Philadelphia and New York, reduces the longevity of their citizens to twenty-five years. Under the influence of measures, taken with a view to public health in various countries, the general mortality has been reduced during the years from 1875 to 1882, for every one thousand inhabitants, as follows : In England from 22.8 to 19 ; Belgium from 22.7 to 20.8 ; Bavaria from 31.4 to 28.5 ; Switzerland from 24 to 20.3 ; Italy from 30.7 to 27.4 ; France from 23.7 to 22.2.

I must beg pardon for devoting so much time to this cursory review of the subject of public health in general and come to the consideration of the subject as it pertains to our own State. The special object of this convention is not only to consider the subject as affecting mankind at large, but to endeavor to impress upon the needs of our own people that, with an area of 46,000 square miles and a population approaching 5,000,000 souls in the State of Pennsylvania, there is, with our large cities, towns, mines and manufacturing establishments, a great field for sanitary work and a crying demand throughout the length and breadth of this Commonwealth for the enactment of more stringent sanitary legislation.

Regulations established by legislative enactment which through the State Board of Health, will be felt and respected in every city, town, village and hamlet in the State. Before entering into the discussion of additional legislation in order to render effective the laws of 1885, establishing the State Board of Health, it may be well to call attention to the provisions of the act and note what other States and even Territories have done in the same direction. The act approved June 3, 1885 was the first step taken by the State Government toward protecting the lives and health of her subjects against filth diseases. True, the larger cities and towns were long since compelled from dire necessity to organize and maintain local Boards of Health and a registry of vital statistics; but prior to 1885 it was only a struggling, desultory warfare against preventable diseases within the confines of our State. Isolated health boards and solitary sanitarians (who were ofttimes styled "cranks") here and there have carried on a gallant fight, but against great odds, simply because they lacked the element of intelligently combined action, which, in all the affairs of man, are essential to success. The law of '85 can well be compared to an engine without a boiler, a skeleton without muscles, nerves or vital organs necessary to constitute a perfect working machine.

Not only is the Board required to perform the duty of abating nuisances on behalf of the entire Commonwealth, such as is assigned to each local Board where such Boards exist, but it must have a general supervision of the lives and health of the citizens of the State, study its vital statistics, make sanitary investigations and inquiries respecting the causes of disease, and especially of epidemic diseases, including those of domestic animals, and respecting the sources of mortality and the effects of localities, employments, conditions, habits, foods, beverages and medicines on the health of the people. It must institute sanitary inspections of public institutions or places throughout the State. It must "codify and suggest amendments to the sanitary laws of the Commonwealth and enforce such regulations as will tend to limit the progress of epidemic diseases. It is its duty also "to have the general supervision of the State system of registration of births, marriages and deaths and of prevalent diseases. To prepare the necessary methods, blanks and forms for obtaining and preserving such records, and to insure the faithful registration of the same in the several counties and in the central Bureau of Vital Statistics at the capital of the State and to suggest such laws and amendments to laws" as shall increase the efficiency of such registration. And finally, it is required to make an annual report of its proceedings, which shall contain other useful information relative to the objects for which it was created. This same act made it the duty of the Secretary of Internal Affairs to furnish clerical force, stationery and suitable apartments for the safe keeping of the Bureau of Vital Statistics. And all this work the Board of Health is supposed to accomplish with an appropriation of $5,000 a year out of which is to be paid a Secretary's salary of $2,000. In no other State in the Union has such varied and comprehensive duties been assigned to their Boards of Health. I am creditably informed that the calls have been so numerous for the duty of inspecting and correcting local insanitary conditions and the outbreaks of disease consequent upon them, that no means have been left to be appropriated to the prosecution of scientific investigations, one of the special duties imposed and expected by the provisions of the bill.

Certainly the great State of Pennsylvania does not intend, through its Legislature, to compel any of its unpaid officers to accomplish twelve or fifteen thousand dollars worth of work with an appropriation of $5,000. To one who has a correct idea of the amount of work contemplated and absolutely necessary under the act, I submit the situation must appear ridiculous. Not so to me. I have had experience with sanitary legislation and I can assure this convention that the average legislator is excusable for his actions in relation to a subject of which he is entirely ignorant. To illustrate more fully, I need only to relate the experience of one of the delegates to the National Conference of State Boards of Health in Washington last September. One of the subjects was the consideration of the best methods of accomplishing sanitary legislation.

One after another had something new to suggest. Finally one of the speakers gave his experience in impressing the importance of sanitary legislation upon a Statesman. He thus describes an interview with the Hon. Mr. F., of his State. Upon his mere mention of the subject, the Honorable Gentleman quickly replied, "Oh my, don't bore me about that. When I was in the Senate a set of cranks bored me to death." Let us see what other States are doing in the way of sanitary legislation. New York, with an area of 47,000 square miles and a population of less than 5.-500,000, has for several years appropriated $20,000 annually to her Board-Massachusetts, with an area of only 8,040 square miles and a population of less than 2,000,000, last year gave the State Board of Health the sum of $22.-500. Illinois appropriates $12,000 annually and places a contingent fund of $40,000 at the disposal of the Board for use in case of great emergencies-New Jersey, with an area of 7,576 square miles and a population of less than 1,500,000 gives her Board an annual appropriation of $8,500 with an additional thousand for food analysis.

We come now to consider the important question of the hour; what legislation is necessary in order to render effective the present State Board of Health organization? If it is necessary to have a School Board in every township in the Commonwealth in order to render effective the great beneficent common school system, it is also necessary to have township Boards of Health. If it is necessary to have a tax gatherer in every township in the State to collect the revenue, it is also necessary to have a local authority whose business it is to abate nuisances and disease-breeding filth piles which exist in every township in the State. If it is necessary to have an assessor in every township that no man may escape his mite towards the common fund for the education of his children and the protection of his rights, is it not as well necessary to establish for him some protection in case his neighbor pollutes his drinking water or contaminates the air he breathes. If it is necessary for the State of Maine, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, South Carolina, Illinois, Michigan, Indiana, Iowa, Kansas, and Minnesota to have township health organizations under legislative enactment, it is likewise necessary for the State of Pennsylvania to insure that protection to the health and sanitary comfort of her people. And, in view of the coming meeting of the Legislature and the fact that it is made the duty of the State Board of Health to suggest from time to time additional sanitary legislation, it is to be hoped that this important duty on their part will not be delayed. Did time permit, it would afford me pleasure to suggest some points in relation to the formation and organization of these local township boards. In order that they may be effective and productive of the good results which cannot fail to accrue, the health officer of every township should have police power under the direction of the local Boards. The annual appropriation to the State Board should be increased to an amount at least approaching the amount of duty imposed upon it. And as the people require and are sadly in need of sanitary education, a sufficient part of the annual appropriation should be specifically set apart for the publication of plans, rules and hints pertaining to the preservation of health and prevention of preventable diseases. These publications should find their way through the local Boards of Health to every fire-side, and as often as it would seem necessary.

The establishment of an additional clerkship in the office of the Secretary of Internal Affairs, whose duty it will be under the law to record and preserve the vital statistics, is a dire necessity and would have been established at the last session of the Legislature had three Honorable Senators known half as much of the necessities of sanitary legislation as they did of political intrigue. This bill passed the House of Representatives with a unanimous vote and was smothered in the Senate committee. The only absurd reason given was that they "were now so numerous in the office of the Secretary of Internal Affairs that they were falling over each other." The true reason was that one of the distinguished Senators had a good worker for the place and, finding out that it could not be secured for him, gallantly made up his mind that no one else should have it.

It is to be hoped that, before this Convention adjourns, resolutions will be found upon its minutes, calling the attention of His Excellency the Governor of the Commonwealth, to the necessity of a more liberal appropriation for sanitary work, the importance of local Boards of Health in every township established by law and urging the necessity of a compliance with the existing law of '85, that the Secretary of Internal Affairs may be enabled to preserve the records of vital statistics. It is further hoped that His Excellency, after a careful examination of the subject in all its bearings may, in his wisdom, deem it of sufficient import to call the attention of the Legislature to the same in his message to that body at its next regular session in January, 1889, with such recommendations as may, in his judgment, seem proper and consistent with the duties of his high official position.

There are other matters requiring legislative interference, all of which we do not expect the present executive to embody in his message. But the day will come when the wise counsellors of our country will find it incumbent upon them to prevent by law, as sanitary measures.

1. The intermarriage of blood relations, consumptives and others suffering from distinct hereditary diseases.

2. The prevention of intramural inhumation and provide a safer method of disposing of the dead.

3. Requiring the formula of all so-called patent medicines to be plainly written or printed on each package or bottle before being exposed for sale.

4. Requiring all persons to have a thorough classical education preparatory to taking up the study of medicine or surgery, and compelling them to attend, for at least five years, an ac-

credited medical or surgical college before entering into the practice of the healing art in any manner or form whatever.

In conclusion, I beg leave respectfully to suggest to the State Board of Health in view of the manifest interest excited by this convention and the valuable results which must flow from it to the citizens of Lewisburg, the expediency of holding at least two similar conventions annually in different parts of the State.

SHOULD THE NATIONAL GOVERNMENT ASSUME THE CONTROL OF QUARANTINE AT ALL PORTS OF ENTRY?*

BY BENJAMIN LEE, A. M., M. D.,
SEC. STATE BOARD OF HEALTH OF PA.

The question suggested for the consideration of the Conference by the Board which I have the honor to represent, must have been much in the mind of every sanitarian upon whom rests a responsibility since our last meeting. All that I propose to do is to introduce it. It has already been ably discussed by leaders in sanitary reform, and there are those present who can do it much fuller justice than I. Two of the three most dreaded contagions have been brought to our northern ports from across the Atlantic during the past season. If one of them was successfully excluded, which the test of a heated term is needed yet to decide, it would almost seem to have been more by good luck than good management, so many were the defects discovered in the means adopted to bar its entrance; while the other has effected a lodgment and already created much uneasiness. Both of these diseases a perfected system of quarantine should, in the opinion of our foremost sanitarians, entirely debar. At the present moment one of our southern states has already several centres of infection of the third of this detestable triad, and with months of hot weather to look forward to, the outlook there is not reassuring. All of these diseases are exotics. They do not belong here. They are born of the filth of old and decaying civilizations. They can and must be excluded. But they never will be excluded so long as the present irregular, insufficient, disconnected mode of defensive warfare is relied upon to accomplish this object.

There must be from the North-east to the South-west, from the St. Lawrence to the Rio Grande but one quarantine system, one set of quarantine regulations, one organization and one controlling head. Of course in saying this, I do not forget that one of the great American ports belongs to another government than ours. But the authorities of the Dominion have of late years shown such zeal in their efforts to unite with us in all that concerns the sanitary welfare of the continent that I conceive there would be no difficulty in establishing a reciprocal relationship which would make the two systems one in their practical workings. As Dr. Rauch, in his admirable report entitled "Coast Defences Against Asiatic Cholera," well says:—"The fact that in the absence of National health authority and legislation maritime quarantines are controlled and administered by State and local authorities, results in diverse and frequently conflicting regulations and requirements, and of necessity in a tendency to limit precautions to their own individual interests, commercial as well as sanitary." He might, however, have made his assertion stronger and said "commercial rather than sanitary," for I believe it will be found in every instance where the authorities of a city are made the repositories of this trust, the interests of trade are allowed to be paramount to those of public health. So keenly has this been felt that during the time that cholera-infected ships were lying in New York harbor last Autumn, one of the oldest and most conservative Medical Societies of the country, the College of Physicians of Philadelphia, appointed a committee, as is probably known to all of you, the principal object of which was to obtain concerted action on the part of all medical societies in urging upon the State and National authorities the adoption of a uniform and efficient system of quarantine for all exposed ports. Of the lamentable deficiencies which this Committee, in the course of its investigations found in the preparations of the sanitary authorities of the three great ports of entry of the Middle States for the reception of vessels infected with Asiatic Cholera, I have neither heart nor desire here to speak. But certain of their deductions are entirely germane to the question and must not be slighted. There is one cause, they say, of the defects of our present quarantine stations which is so prominent that we may dwell on that alone. It is the great expense. Were it not for the question of money, there would have been physicians constantly in attendance at the New York station, and, consequently better management and discipline would have been maintained, while at Philadelphia and Baltimore there would have been adequate establishments provided for the isolation and observation of large bodies of immigrants.

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* Read before the National Conference of State Boards of Health.

Municipalities and States are wont to scrutinize every dollar of their money appropriations, bringing their expenses down to the closest living limit. Quarantine in this country being, as a rule, enforced mainly against yellow fever and smallpox, a mistaken economy has caused no provision to be made for the more perfect establishments absolutely required for protection against cholera.

Philadelphia, Baltimore, and other ports of a more limited commerce, are unable to spend as much on their stations as is New York, with its large revenues from that source, yet, an inefficient quarantine at any station exposes the whole country to the dangers of the importation of disease. But it is manifestly unfair that a single municipality or State should defray the expense of protecting the whole public.

How, then, can we have equally complete stations all along the coast? We believe that this can be effected by putting quarantine into the hands of the National Government. We know that there are legislative difficulties in the way; that, quarantine partaking of the nature of police regulation, its exercise, it may be claimed, belongs to the local authorities. Yet, even if it be conceded to be a police regulation, its scope is not local, but extends over the whole country, and it would seem, in justice, that it should be exercised and paid for by the whole country.

In thus urging that the outer line of fortifications should be constructed at the expense of the general government and manned by federal troops, I do not wish to be understood as suggesting that any of the precautions, excellent as far as they go, now taken by local authorities for their self protection should be abandoned. There still will be ample room for a secondary cordon of inspection within the lines where much useful work in detail may be accomplished. But the great burden of protecting the nation should be borne by the nation. I am well aware that there is one brilliant and conspicuous exception to the general rule of inadequate provision for and inefficient administration of local quarantine, that of the State Board of Health of Louisiana, but even there the resources of the entire state, and that a rich state, are at its back, and the result moreover has been attained only by the persistent energy and magnetic powers of a single individual, and may not long survive him. In order to elicit a general expression of opinion on this most urgent question I would offer the following resolution:

Resolved: That this Conference, recognizing the failure of local authorities to administer quarantine effectually in a large majority of cases, respectfully urges upon the national government the duty of assuming control of Quarantine at all ports of entry.

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DR. JOSEPH HOLT having resigned his position as president of the Louisiana State Board of Health, and removed from the State, Dr. C. P. Wilkinson, a graduate of the Washington-Lee University and of the Louisiana Medical University, has been elected in his stead.

TYPHOID FEVER.—A DISEASE OF THE VILLAGE AND FARM.*

BY JAMES B. WALKER, M. D., OF PHILA.

Typhoid fever in medical literature is a matter of modern introduction. Its essential symptomatic peculiarities, distinguishing it from other continued fevers were first truly and clearly traced by Drs. Gerhard and Pennock of the Philadelphia Hospital Staff who had studied the various endemics and epidemics of the continued fevers in Paris under Louis and in Great Britain and who by a series of studies of the cases entering "Old Blockley" were enabled in 1837 clearly to define its especial and peculiar symptoms, firmly establishing its individuality and its entire and complete non-identity with Typhus of which it had hitherto been considered a mere modification and congener. But though so recently fully *identified* it has long *existed* as an enemy to the human family.

One of its most characteristic differences from Typhus and the one which concerns my subject for to-day is its manner of existence and means of dissemination. Typhus spreads through the air from patient to victim traversing the routes of commerce from city to city generated in over-crowding and filth and existing chiefly in epidemics, with longer or shorter intervals of rest between its visitations. Typhoid fever, on the other hand, in temperate latitudes at least, is like the poor "always with us" in isolated or sporadic cases and although it sometimes assumes an epidemic character such an epidemic is limited to an area in which the conditions for its life are existent. In reclaiming a new bit of territory in our large country from its primitive wildness the first disease-foe to be encountered is malaria in the technical sense of that term as applied to Intermittent and Remittent fevers. As the population becomes more dense Typhoid appears, although it may exist in the most sparsely populated district, and it remains to constitute the chief febrile disorder of civilization. With us it is the most frequent of all fevers and being always existent to a greater or less degree throughout the entire year it has become at once one of the best understood and most interesting of the acute diseases.

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*Read before the State Sanitary Convention at Lewisburg.

The conditions favorable for its development, in other words its life history without the body while not fully understood as yet, in all their minutiæ, are still sufficiently well-known to supply the sanitarian with positive data and to enable him to enumerate many of the principles of its origin and diffusion and to legislate for its limitation or even perhaps for its complete suppression. Much more limited in its means of diffusion than Typhus, Relapsing Fever, Yellow Fever, Small-Pox or Cholera its dissemination is in most, if not in all cases, preventable; and even a severe epidemic, spreading its virulence upon a careless community may be promptly throttled by strict enforcement of well established rules which are simple and within the reach of even the poorest community in our country.

The negro-melodist tells that,

"When the Yellow Fever comes and
settles all aroun;
'Tis better than the Quarantine to
shuffle out of town."

But even this simple, though often impossible plan of escape from the ravages of an epidemic is not necessary in case of Typhoid Fever. No necessity "to show the white feather" at all, but simply to meet it bravely with a wise use of the knowledge of the few and narrow lines of its transmission and it is conquered.

The causation of this disease lies essentially in a specific something. About this, at the present time there can be no reasonable doubt. Whether this something is the special microbe found in so many carefully conducted investigations by different bacteriologists and labeled *Bacillus Typhoidea* or some other organism it is perhaps too early to make *positive* assertion. It is reasonable to suppose this to be true but as it has not been incontestably proven by that crucial test which science demands, viz.; the induction of Typhoid Fever by pure inoculations with such microbe, we must be content to await further investigations. Fortunately for the cause of sanitary science and human welfare it is not essential that we have absolute know- of the entity itself. Its *habitat* is known and most if not all the conditions for its development or generation and dissemination; with such knowledge we are well armed against even so secret a foe.

Murchison in his classical and monumental work on "The Continued Fevers" concludes that this disease is chiefly transmissible from the sick to the well through the fæcal discharges and furthermore, that these discharges are not in at least the *best* condition for such transmission immediately on their discharge from the body of the patient; but chiefly on their undergoing fermentation or putrescence. So far as *positive* data go, abundance of which is collecting, this statement of Murchison is being confirmed and we now have reason to believe that Typhoid Fever, like Cholera and Epidemic Dysentery is transmissable from the sick to the well chiefly, if not exclusively, by means of the bowel discharges. There is a certain amount of what might be called negative data indicating possible transmission of the contagious principle with the exhalations from the skin or lungs ; but these methods are certainly much less active if they exist at all. To the alvine discharges we attribute the means of contagion and in these must exist the specific entity endowed with such wondrous power. And, we must insist on this specific entity. Typhoid Fever is a specific disease running a specific course and is no more capable of arising *de-novo*, than is an individual of the human family or a tape-worm in his intestinal canal. Putrefactive organic matter and putrefactive fecal matter par excellence furnish the conditions favorable for its multiplication sufficiently to give it power by numbers and virulence to invade the human system.

The experimentalist in bacteriology has shown that the most virulent microbes may become so enervated by a series of pure cultures as to become at last totally unpossessed of noxious power ; whereas if permitted undisturbed to multiply themselves under favorable conditions for their development their virulence gathers force as it goes until it has increased many fold. During the occurrence of any epidemic disease we see the same thing occur. The first to contract epidemic diseases provided they are exposed to the poison are those who are most susceptible. These cases *should* hence be the most severe, whereas the fact is the *first cases* are comparatively mild and with the progress of the epidemic the cases become more and more severe until the height is reached. This period represents the highest degree of virulence of the poison grown so by its rapid multiplication and spread. Then its fatality is at its maximum. Many who had been exposed in its earlier period with impunity are now attacked and this independently of any cause for individual depression such as fear, fatigue from waiting upon the sick, grief for the dead or sorrow for the stricken. Then as the conditions for its growth have been in great measure exhausted it grows more and more mild in its decline.

This fact, illustrated in all epidemics, most marked in cases where no attempts at arrest are made by wise sanitation, illustrates the varying malignity of the virus or contagion of all diseases capable of producing epidemics. Dilution of the specific entity emasculates it. The peculiar poison of the disease under consideration furnishes no exception and in this condition of attenuation may exist wide-spread without exciting disease, Finding its way into cesspools and other decomposing organic material and under natural culture it is raised to a condition of concentration and virulence capable of attacking a human system into which it obtains ingress. In some such manner must we explain cases of Typhoid fever arising in by-ways where no previous cases were known to exist, but where contamination of drinking water or food with night soil is traceable. Such cases cannot prove the spontaneous generation of Typhoid Fever or that sewage independent of its inoculation with the specific poison of Typhoid Fever is capable of producing the disease.

The predisposing causes for the spread of this disease are chiefly personal.

Given the specific virulent contagion all exposed to it do not suffer. "One is taken, the other left." In some there is a peculiar lack of resistance to its encroachments. Such may suffer from repeated attacks. To most, however, one attack secures future immunity. In most individuals of average vigor the predisposition is not inherent but acquired, induced by all causes of depression, whether mental, moral, or physical. Fatigue in all its grades, fear, worry, improper food or irregularity of meals, insufficient sleep, preexistent disease, intemperance are some of the causes of depression of our normal forces of resistance to disease in general and epidemic disease in particular, including Typhoid Fever.

Age has also a predisposing or preventive influence. The disease is one attacking the growing youth or the citizen in the vigor of young manhood. From 10 to 30 years of age is the period of its greatest predisposition, while infancy and early childhood and age beyond 50 years, while not absolutely protective in their influence, are nevertheless in a measure so. This gives to Typhoid Fever its worst aspect as a destroyer of life, viz: that it cuts off those who are already or soon will become active citizens of the Commonwealth, objects of intensest interest to parents and friends or heads of young families whose untimely loss is an unmitigated sorrow.

With these facts before us the propagation and spread of Typhoid Fever, is certainly not a difficult problem. Unhygienic living is the rule. Insanitation is rife in city and country.

And now a word or two as to the manner in which this specific poison finds entrance into the economy of its new victim. The first evidence of its invasion and the essential lesion of the disease is found in the intestinal tract, and it is rational to infer that it finds entrance into the body by this channel. The food and drink must therefore be looked upon as the chief vehicles for its transit, inasmuch as they are directly introduced by this means. But the air may still be the bearer of the poison directly to the individual. The air we inspire sweeping over the moist adhesive surfaces of the air passages while carrying to the deepest recesses of the lungs the gaseous elements of its composition deposits its *particular* elements upon these adhesive surfaces over which it rolls.

This is proven by the fact recently established in Brown-Séquard's laboratory in Paris that the expired air is "optically pure," or in other words possessed of no particular elements. In whatever portion of the respiratory tract, these particles alight, whether in the nasal or oral cavities, the throat, trachea or bronchi they are carried to the throat and swallowed from time to time, and so a ponderable substance as we have reason to believe the virus of Typhoid Fever to be, even if introduced to the system through the atmosphere will find itself seeking and be favored in the search for the normal means of ingress in the small intestines in whose solitary glands and patches of Peyer it finds temporary lodgment and thence entrance into the general system. Sewer-gas, not from its gaseous qualities, offensive and otherwise noxious as some of them are, but from its ponderable though light particles of specific organic matter, may thus be the means of directly poisoning its victim ; or it may do so indirectly by first infecting his food or drink.

But sewer-gas is not the only vehicle for this poison, else were most surburban and rural districts saved from its depredations. But they are not. The records for our whole country show a greater proportion of deaths to the population from Typhoid Fever in country places than in cities. The attempts by means of traps and the ventilation and flushing of sewers to prevent its entrance into houses having sewer communications while far from perfect, indeed while woefully deficient even where the most improved methods are used are nevertheless, as these records show, of invaluable service. But surburban and rural districts possess a special liability, and this, other things being equal, in direct proportion to the density of the population. The conditions accentuating their liability lie chiefly in the contamination of their water supply. These conditions are easily understood and usually are due to direct fluid communication from cess-pools to wells. The multiplicity of absolute data in which cases of Typhoid Fever have been clearly traced to such contamination places this method of propagation beyond the shadow of a doubt. The fluids percolating the soil from a cess-pool located dangerously near the well furnishing the family with drinking water or overflowing in time of rains, the surface water afterward finding its entrance into the well or spring, carry the ponderable virulent specific more surely than even the detested sewer-gas of our cities. No matter if there is no *known* infection of the contents of a cess-pool with Typhoid dejecta, they may still possess it and should be prevented from possible contamination with the water or fluid supply on this account as well as others which are sufficiently patent. This can perhaps only safely be accomplished where a number of persons use the old-fashioned out-house to have it deep enough, embanked about to prevent surface flushing from rains and melting snows, and cemented to avoid soil contamination and then properly emptied at intervals. That Typhoid Fever is not simply a filth disease is proven by many notable instances and perhaps by none more forcibly than by some of the Eastern cities. Take Shanghai for instance : what is known as "Old Shanghai" is a low lying, densely populated city with narrow streets reeking with filth, and so noisome and odorous that a foreigner has no desire to pay it a second visit. The houses are built compactly and keep the narrow streets dark and damp by excluding the sunlight. But in spite of its generous supply of filth Typhoid fever is only an occasional sporadic visitor. The requisite for its development which seems to be wanting appears to be due solely to their treatment of the night soil. This is collected in buckets and removed daily to be emptied into sealed pits, in which it is allowed to remain until after fermentation takes place, when it is removed and used as a fertilizer. This to my mind is a most marked and striking instance of the fact that sewage is the most favorable hot-bed of all putrefactive organic matter for the propagation of the Typhoid Fever poison.

Transmission is further prevented by their only drink, tea or boiled water to quench their thirst, they never drinking water direct from spring or well.

The water supply must however be protected from contamination with all putrescent organic matter in order to rest perfectly secure. Last winter I was called to a farm house near Parkesburg, in this State, where four members of the household were ill with Typhoid Fever, and one other was attacked a few days subsequently. They had moved into the house in the Fall finding it reeking with the odors from a large collection of rotting potatoes in the cellar, which were removed, the cellar ventilated and cleansed and white-washed before their occupancy. But the scent of the potatoes hung round it still, and was apparent even at the date of my visit some weeks after. The cellar communicated by means of a descending, winding underground vault with the well through an aperture in its wall a short distance above the water-level. The out-house was several yards from the well and contained but a small amount of dry material so that it was not probable any communication existed between it and the water supply. Still it was possible. It seemed to me, however, that the cellar filth furnished the hot-bed for the propagation of the specific poison.

Where well water is used in villages and the more thickly populated rural districts the well should be sufficiently deep to draw the water from such strata as shall favor its purification by filtration. But even this will not *ensure* it, as wells are ordinarily built with permeable walls; it should be protected from surface flushings by rains, etc., and no filth of any sort deposited near it. If shallow wells are used the water should be tested carefully from time to time to insure the absence of organic infection. Wells should not be opened in or near cemeteries nor other places where large bodies of organic matter are undergoing decomposition; or if already opened they should be sealed from use. Springs, whose bubbling liquidity seems to indicate the very quintescence of purity, may carry death to those that quench their thirst thereat.

The reservoirs which feed them may be polluted as in the case of wells or the water may be polluted on its way thence to the surface at the spring. Their water should be examined whenever suspicion points to their possible pollution, and they should always be especially protected from possible contamination with surface water, and hog-pens, slaughter-houses and all other filthy appendages to farm and village should be so located as to prevent possible pollution.

These are self-evident truths; but that they are not appreciated needs but a visit to many if not to most suburban and rural districts. One of the earliest efforts of the State Board of Health was expended in a resort to the Courts of Montgomery County to exclude such nuisances from even so aristocratic a suburb as Bryn Mawr.

Where Typhoid Fever is already existent, of course extra precautions are necessary to prevent its dissemination. Careful attention to this fact in the single case of Typhoid occurring on the borders of the mountain stream feeding their reservoirs would have prevented the occurrence of over eleven hundred cases during the recent Plymouth epidemic as shown by the careful, interesting, and skilful investigations of Dr. Taylor, of Wilkes-barre and his coadjutors. Eleven hundred cases of disease and one hundred and forty deaths, most of the latter under 30 years of age, all the result of carelessness in the management of a single case!

The alvine discharges from such cases, reeking with the germs of disease, must not be treated with unconcern, even in the most isolated hamlet. They should be thoroughly disinfected immediately they are voided. Indeed a very good plan is to place a small amount of an active disinfectant in the bed-pan when about to be used that disinfection shall be immediate. More copious additions should afterward be made and the contents of the pan at once removed, and if possible buried in the earth.

If necessity compels their admixture with other sewage, disinfection should be thorough before this is done. For the disinfection of stools we may use solutions of Corrosive Sublimate two drachms to one gal., or Iron Sulphate or as recently recommended by Prof. Vilchur, of St. Petersburg, a quantity of boiling water equal to at least four (4) times the volume of the stool. Free ventilation of the sick room is important in this as in all febrile diseases. This should be produced by allowing the entrance of the outside air not at intervals, but during the entire course of the disease. It is a great, but common mistake to ventilate the sick chamber by means of the door communicating with the rest of the house. It is a mistake both on account of the imperfect ventilation thus secured; and also chiefly for the good of the rest of the household. The exhalations, other than those of the bowels *may* be poisonous. If so they are but feebly so and their power to reproduce the disease would be still more greatly curtailed by the free dilution of the air of the room and of such poisonous exhalations by proper ventilation with the outside atmosphere.

The patient should be bathed daily at least, choosing for such bath the period of the day, usually the afternoon, when the fever is at its height. The personal clothing should consist of a single loose-fitting muslin or linen gown, no underclothing being allowed, even though the patient is accustomed to sleep in such when well.

The bed-clothing should be light and those in contact with the patient of washable materials. The bed and body clothing should be frequently changed, even though showing no signs of soiling. If soiled by the fecal discharges even though slightly, they should be removed *at once* and placed in boiling water. The history of an epidemic lasting from 1873 to 1885 in a German Artillery barracks causing 146 cases, recently reported in the *Medical Press*, illustrates the danger of infected clothing. During this long period all possible sources of the disease were subjected to careful scrutiny without result until suspicion fell upon the bed and body clothing. It was then ascertained that three (3) of the recent cases had used the bedding and clothing of men that had been attacked. This led to a closer examination, when it was discovered that the lining of the trousers were soiled with dried fecal matter. Although this clothing had been exposed to sulphur vapors the poison had evidently not been destroyed. Thorough disinfection with first, thorough cleansing, then 12 hours saturation with chlorine gas, and afterward dry heat for several hours put a stop to the epidemic.

The attendants upon the patient should have hours of rest and exercise sufficient to preserve their normal powers of resistance to disease and should never eat nor sleep in the sick room. No food used by the family should be kept in the room occupied by the patient or in any place where contamination is possible. This is especially true of milk, which is possessed of such decided absorptive powers. Many local epidemics have been traced to the infection of milk where Typhoid Fever existed in the household of a dairyman, who was either careless in the matter of protecting the produce of his dairy from direct contamination from the sick ; or who was *too liberal* in its admixture with the fluid from that notorious "best cow" on some farms,—*the pump*, the use of which water had perhaps caused the attack in his own household.

Water which is even suspected of such contamination should either not be used at all, or else submitted to boiling, that such organic germs as it may contain shall be destroyed. Such are some of the principles included in and underlying the subject assigned to me. They could be more thoroughly elaborated or much amplified by illustration but time does not permit.

SCHOOL HYGIENE.

BY D. F. LINCOLN, M. D., OF BOSTON, MASS.

(Continued from page 183.)

III. VENTILATION AND HEATING.

This is one of the chief topics, and one of the most difficult, connected with School Hygiene.

It is comparatively easy to build a convenient and spacious house: the requirements are well known, the cost is tolerably definite, for a given place and time. The problem of merely heating a given space is also one of moderate difficulty. But ventilation is a matter about which a general opinion is hardly yet formed, and the cost of which is very vaguely known. People in general are not yet agreed as to what constitutes good ventilation—how much fresh air per hour is required.

Between a barely tolerable system, eked out by opening windows, and a system which really furnishes a supply of from thirty to sixty cubic feet of fresh warm air per head and minute, there are many shades of difference. Few have a mastery of the somewhat complicated questions involved ; very few have seen successful and logical experiments made ; and many are called on to act as judges—to act upon an opinion which they cannot have formed.

Amount of Fresh Air and Cubic Space Required. It is unfortunate that authorities differ so widely on these points. The New York Metropolitan School Board sets the minimum allowance of space per head at from 70 to 100 cubic feet, according to age. Fortunately, this does not represent the general practice in that city,—though, to the eye, the appearance of many infant classes suggests the idea of sardines in a box.

Most authorities would wish to double these figures, at least.

According to recent inquiries in Boston, there is no corresponding law or regulation ; but it is customary to build rooms for fifty-six pupils, with an allowance usually ranging from 160 to 220 cubic feet per head. Prof. Kedzie, of Michigan, claims 300 cubic feet; A. C. Martin, 220; various German states, from 120 to 284. The Conseil Supérieur d'Hygiéne Publique, in a recent report to the Belgian Ministry of the Interior, recommends a minimum of 6¾ cubic metres per head, or about 240 cubic feet, a space which requires the unusual height of 4½ metres, or about 14 ft. 10 in. The high position of the sanitary service, especially as regards schools, in Belgium, lends weight to their recommendation.

It is the writer's belief that it is desirable to limit the size of classes to forty (40) pupils Experts in education recognize the gain that accrues to the individual scholar from such limitation. If we base the calculation on this figure, we have more liberty of choice between large and small rooms in making our plan for a building. The advantage of space is twofold;—it enables us to introduce large volumes of air, fresh and warm, without danger of draughts: and it gives more value to the practice of airing-out the room by windows at recess times, since a large roomful of fresh air lasts longer than a small one. But there is such a thing as too much space, entailing difficulties in regard to discipline and teaching, and making it hard to secure good light. For example, a class of fifty-six, with an allowance of 250 cubic feet each, requires a room of the capacity of 14,000 cubic feet, or 27 feet wide, 37 long, and 14 high, dimensions which can hardly be profitably exceeded, if indeed they are not too great already.

As regards the amount of fresh air to be introduced hourly, it is desirable to found our ideal upon the basis of Parkes & DeChaumont's views, which represent the best authority. By depending upon the testimony of their senses as to whether rooms were "close" or "fresh," these authorities reached the conclusion that it is not desirable to allow the amount of carbonic acid in air to exceed the proportion of six parts in 10,000. Any higher proportion seemed to be attended with perceptible closeness.

Now, assume that fresh air from out of doors contains 3½ parts in 10,000, which is a trifle below the usual rate. A room of the capacity of 10,000 cubic feet, freshly filled with this air, and tenanted by one man, would receive from his lungs an addition of 2½ cubic feet of carbonic acid in 4⅙ hours, raising the total to 6 cubic feet. If, then, 10,000 cubic feet will last 4⅙ hours, the supply for one hour should be 2,400 cubic feet, or for one minute 40 cubic feet.

The usual assumption is, that "fresh" air contains 4 parts, not 3½ in 10,000. If so, the hourly requirement is about 3,000 cubic feet, or 50 per minute. Billings increases this to 60. If an average school-room of the better class contains an allowance per scholar of 200 cubic feet of space, there would be a necessity for renewing the air completely every four minutes, or fifteen times in an hour. This requirement, however, is intended to apply to rooms used day and night, such as barracks. For school-rooms, the amount may be less, owing to the opportunities for frequent airing, and the total disuse out of school hours. The writer agrees with Dr. Billings in the belief that, *for schools*, the allowance of *from 25 to 30 cubic feet per minute and head* will answer all needful purposes, if supplemented by occasional airing-out during and after school.

It is evident that if air is to be introduced so rapidly, there should be a liberal allowance of room, in order that the incoming air may not be felt as a draught. The outgoing air, by the way, is rarely felt; but a very vigorous draught may be appreciable two feet from the register.

Do children require a smaller allowance than adults? or, Do small children require less than large ones?

One answer in the affirmative, is derived from the estimates of CO_2 exhaled at different ages. Breiting gives it, for girls aged seven or eight years, at a little over 10 litres per hour; at the age of eight or nine, 12 litres. If engaged in singing, it is 16.7 for the latter age. Boys aged twelve or thirteen expire 13 litres; during singing the amount rises to 17. Scharling gives, for the age of ten years, close upon 10 litres; for a boy of sixteen, 17.4; for a young woman of seventeen, 12.9; for adults, a little more. Pettenkofer & Voit give 10.8 for a weak man and 22.6 for a strong man.

It would appear, then, that there is a decided difference to be allowed for. Primary pupils expire less CO_2 than high school pupils in the ratio of 2 to 3; or perhaps the difference is still greater. If a room ought to contain the cubic space of 250 feet per head for larger scholars, it need contain only 180 for the same number of small scholars. In other words, forty large and sixty small scholars can be accommodated in an equal space.

This estimate, however, is admissable only on the supposition that the ventilation is efficient. In case of defect, or apprehended defect (and this covers a wide ground), the young children should have equal room with the older ones, on the ground of their comparative inability to cope with the deleterious effects of bad air; also, because in contracted quarters the danger of draughts from windows is greater. It has been said that children need a proportionately large allowance, "because metamorphosis of tissue goes on more rapidly in them." We have two means of estimating the amount of tissue-change,—the quantity of CO_2 exhaled, and the quantity of *food consumed*. On the whole, the latter item is sufficient for the argument, and may be belived to represent the amount of change of tissue very well. It is quite evident that, though boys of fifteen may consume as much food as men, children of eight do not. A supply of air, then, which would be liberal for a large boy, would be more than liberal for a small child. The degree of allowance to be made is a point upon which distinguished authorities differ. De Chaumont would place three times as many children of four or five years in a given room as youths of fifteen or sixteen, while Billings would allow very nearly the same amount for children of all ages.

Dimensions of Ventilating Apparatus. Let us suppose the case of a school-house to be planned for thorough ventilation. It is assumed that all the air to be extracted is to be carried by flues through the roof. We will first consider the flues for extraction. The resistance offered by friction is of great importance, and should lead us to make the flues of liberal size, as straight as possible, and smooth internally. A flue of less than eight inches internal diameter is not worth much. The inside should be finished in smooth plaster, or better, with sheet metal; never with rough brick unless very large. Angles check momentum very greatly; so do horizontal passages.

Suppose a single room to be ventilated by a single brick flue, straight and well made; and suppose the only force to produce a current is the warmth of the air leaving the room at 68°. It is probable that if the flue is of moderate height, with no fire, the upward draught will seldom exceed the rate of two feet per second. An average of two would be a liberal allowance. If there are fifty-six pupils, the chimney is expected to discharge 28 cubic feet per second, and in order to do this, it must be at least 14 feet in sectional area, or about 4 by 3½ feet inside measure. The register opening to this flue should be at least as large. (The reader may try to form an idea of this by measuring the dimensions on the wall).

Not to speak of the register, such large flues cannot be introduced into a building already finished, and can hardly be thought of in a new plan. There is, indeed, no necessity for so large a shaft if we provide a somewhat different arrangement. If convenient we can cause the furnace-smoke to be carried up this flue in a cast-iron pipe, thus increasing the heat, and possibly doubling the velocity. In large buildings, moreover, the whole system must be centralized, and this is done in two ways,—first, by conducting the foul air from each room by long tubes to a central heated chimney; and second by grouping rooms so that they discharge their foul air at once into the chimney, without intervening "ducts." The latter is the plan of the Bridgeport, Conn., high school, to be described presently.

(TO BE CONTINUED.)

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THE MORTALITY-RATE AMONG PHYSICIANS.—The Gotha Life Assurance Bank publishes some statistics of the mortality among its policy-holders during 1887. From these it appears that the mortality of the medical members was 11.53 per cent. above the average of that of all the members taken together. The classes of disease to which this higher rate of mortality was due were diseases of the respiratoy organs, phthisis, and infectious diseases—"typhus" having proved especially fatal to the younger members of the profession. There was only one case of post-mortem poisoning out of 1,052 deaths, and that was of a district physician. Cerebral apoplexy was remarkably frequent, beginning as early as thirty-six years of age. There were 14 cases of suicide and 4 of accidental death. These are, however, below the general average.

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THE CIGARETTE EYE.—A New York oculist (according to the *Chicago News*) has discovered a new disease, caused by cigarette smoking, the symptoms of which are dimness and film-like gathering over the eye, which appears and disappears at intervals.

SPECIAL REPORTS.

PROCEEDINGS OF THE FIFTH NATIONAL CONFERENCE OF STATE BOARDS OF HEALTH.

This important body of sanitary officers met in the Grand Hotel, Cincinnati, on Friday, May 4, 1888.

The Conference is composed of one or more delegates from each of the State Boards of Health in the United States Dr. J. N. McCormack, of Bowling Green, Ky., presided, and Dr. C. O. Probst, of Ohio, acted as Secretary in the absence of Dr. Lindsley, of Connecticut.

The following physicians were present during the conference: Drs. John D. Jones, of Cincinnati; H. S. Orme, California; J. H. Rauch, Illinois; S. R. Seanight, W. A. Fritsch, S. S. Boots, J. M. Taylor, Indiana; Pinckney Thompson, Kentucky; J. N. Mc Cormack, Kentucky; R. W. Llewelyn, Iowa; W. S. Schenk, Kansas; J. M. Welch, Kansas; H. B. Baker, Michigan; C. N. Hewitt, Minnesota; C. O. Probst, Ohio; Benjamin Lee, Philadelphia; David Engleman, Pennsylvania; James Evans, South Carolina; J. T. Reeve, Wisconsin; B. O. Reynolds, Wisconsin, and P. H. Bryce, Province of Ontario, Canada; Dr. C. N. Allen of Vermont; Dr. J. S. Kennedy, Iowa; Dr. R. E. Starkweather, Illinois; Dr. J. Berrien Lindsley of Tennessee.

Dr. McCormack, the President of the association, read his brief annual address, the particular point of which lay in the stress with which he mentioned the fact, so well known East, that the quarantine facilities of New York are totally inadequate to the demands of the service. The topic for the evening's discussion was then read. It was; "Duties of the Conference in urging the erection of isolated hospitals for infectious diseases, and economical and effective methods of placarding diseased houses and quarantining diseased families."

Dr. Bryce, of Ontario, read a brief paper upon the subject. He urged the importance of the isolation of all cases of diphtheria, scarlatina, and other infectious diseases of that type, and stated that the only means by which the necessary isolation could be obtained was by the establishment and maintenance of hospitals of that nature by townships and municipalities. He admitted that when isolation could be obtained in private residences a removal to the hospital was unnecessary, but contended that as a general thing such isolation was not to be had, especially among the poor people of the large cities.

Dr. Probst agreed that isolation hospitals for the treatment of infectious diseases would be a good thing, but he doubted its practicability. Dr. Taylor, of Indiana, coincided with Dr. Bryce as to the results to be obtained by his plan, but doubted it could be carried out. It might be practicable in very large cities where superb hospital conveniences were abundant, but in small towns and sparsely settled districts it would be impracticable, the effect of removal to long distances being dangerous. Dr. Thompson, of Kentucky, supported Dr. Taylor. Dr. Lee, of Philadelphia, considered that the establishment of such hospitals was only a question of time. The people would soon regard them as a refuge and relief rather than a means of tyrannical and cruel invasion of their rights. He entirely agreed with Dr. Bryce as to the practicability of the plan proposed, and so did Dr. Hewitt, of Minnesota. Dr. H. S. Orme, of California, also advocated the plan. The Chair appointed Dr. Orme, Dr. Hewitt and Dr. Bryce as a committee to investigate the subject and report further.

The question proposed by the State Board of Health of Indiana was then called up: "Is it advisable to attempt to unify the methods of procedure of the various State Boards of Health?" After brief discussion Dr. Taylor of Indiana offered the following resolution:

Resolved: That a committee be appointed whose duty it shall be to examine the laws and methods of procedure governing the various State Boards of Health and those of the Provinces, and from them to construct a system of laws and procedure such as shall meet the approval of this body.

Be it further *resolved:* That, when such system or code is accepted by this body, every legitimate means be used to cause such to be enacted by the legislatures of the several States.

The resolution was referred to the special committee already existing on that subject for consideration.

Drs. Thompson, Baker and Jones were appointed a committee to consider that portion of the presidents address which referred to the inefficient administration of the quarantine system of the port of New York, and report during the present session. The Conference then adjourned to meet at 9 o'clock the following morning. The Conference reassembled at 9 A. M. Saturday, May 5. After the reading of the minutes the Chair announced that the two first questions on the order of business, which had been postponed the evening before in consequence of the absence of Dr. John H. Rauch, who was to take part in the opening discussion, would be the first business.

Proposed by the State Board of Pennsylvania: "Should the National Government assume the control of Quarantine, at all ports of entry?"

Proposed by Provincial Board of Quebec: "Under which control should Quarantine be, both in Canada and in the Union; under federal government (National), or under Provincial or State governments (local)?"

Dr. Lee took the ground, based upon previous history and the investigations of Dr. Rauch and of a committee of the College of Physicians of Philadelphia, that quarantines maintained by municipal governments must of necessity be inefficient, owing, first, to want of means, and secondly, to the interference of commercial interests; and therefore advocated the strict regulation and control by the Government of all ports on the coasts where it was at all possible that infectious diseases could be imported.

Dr. Lee offered the following resolution, which was referred to the regular standing committee:

Resolved, That this Conference, recognizing the failure of local authorities to administer quarantine effectually in a large number of cases, respectfully urges upon the National Government the duty of assuming the control of quarantine at all ports of entry.

Dr. Hewitt said, in reference to the resolution, that it was impossible to look to Congress for action in the premises; that no appropriation was available for adequate quarantine protection, and that if anything was to be done it must be done separately by the State Boards of Health.

Dr. Rauch agreed with Dr. Hewitt as to the inability of obtaining the necessary national legislation for quarantining the coasts.

Dr. Baker said he had no confidence in the efficiency or practicability of a national system of coast quarantine. He favored the continuance of action on the part of the State governments, and obtaining of national aid in emergencies therefor if it were possible. In support of his statement he quoted the well known—to physicians—efficiency of the New Orleans quarantine station, which is under the control of the local authorities, an efficiency which, he said, would be weakened were the National authorities to be placed in control.

The New York quarantine service was notably inefficient, but if the proper efforts were made the service could be brought up to the degree of efficiency of the New Orleans stations.

Dr. Hewitt moved that a committee of five (subsequently changed to nine) be elected by ballot, to visit or correspond with the State, Provincial and other authorities having charge of the sea-board quarantine against dangerous infectious diseases for the purpose of knowing the methods in use, and amount of coöperation such authorities can and will give for the protection of the people of this continent against said diseases, and that said committee be authorized to act for this conference for this purpose, and be instructed to report the results of their investigation to this conference and to the State Boards of Health and to arrange for proper coöperation should any such diseases threaten to invade or actually get a foothood on this continent. It was carried.

At a subsequent period the ballot for this committee was taken and resulted in the election of the following named members: Dr. J. H. Rauch, Illinois, Chairman; Dr. H. B. Baker, Michigan; Dr. C. N. Hewitt, Minnesota; Dr. J. N. McCormack, Kentucky; Dr. T. G. Simmons, South Carolina; Dr. James Simpson, California; Dr. John D. Jones, Ohio; Dr. P. H. Bryce, Province of Ontario, Canada, and Dr. Benjamin Lee, of Pennsylvania. Sub-committees were subsequently appointed to visit personally all the quarantine stations on the Atlantic and Pacific Coasts, from the St. Lawrence to the Rio Grande, and from Oregon to Lower California, these sub-committees to secure the coöperation of the States should cholera or any other epidemic disease obtain a foothold on the continent. They are composed as follows:

From the St. Lawrence to Norfolk, Va., Drs. Lee, Baker, Bryce, Hewitt and Jones.

From Norfolk to Galveston, Drs. Simmons and McCormack.

Pacific Coast, Drs. Simpson, Rauch and McCormack. Dr. Orme to coöperate.

On inter-state coöperation, Drs. Baker, Hewitt and Simmons.

Dr. Rauch is a member ex-officio of each of the sub-committees. The sub-committee's task was divided as follows: Drs. Lee and Jones will visit the quarantine stations on the Atlantic Coast from Baltimore to North Carolina; Drs. Simmons and McCormack will inspect the stations from North Carolina to the Rio Grande, and Drs. Orme and Rauch will inspect the stations on the Pacific Coast.

Drs. Baker, Hewitt and Simmons constitute the committee to secure coōperation between States in case of a visitation of cholera this year.

The following questions, although separated in the published order, were then taken up for discussion together:

Proposed by the State Board of Michigan:

a. What can each State Board of Health do, and what are the best procedures, to prevent the introduction of dangerous communicable diseases, (small-pox, cholera, yellow fever), into States and localities free from such diseases?

b. How can these diseases be kept out of this Country?

c. What should be done to prevent the continued introduction of those dangerous communicable diseases, (diphtheria and scarlet fever) which are common in this country, and which therefore cause the most deaths?

Proposed by the State Board of Kentucky.

a. What is the value of inland Quarantines as against cholera and yellow fever?

b. In a country like ours, where should such Quarantine stations be located, and how should they be equipped and managed?

c. How can State Boards of Health of adjoining states profitably co-operate with each other in such Quarantine work?

Dr. Kennedy opened the discussion in a paper founded on standard authorities, taking adverse ground against the value of quarantine against cholera.

Dr. Bryce gave an instructive account of the methods pursued in the Dominion of Canada, both as regards maritime and inland quarantine, showing the entire efficiency of quarantine when thorough.

Dr. Hewitt, of Minnesota, stated the vigorous measures used in that State to suppress and stamp out infectious diseases. He said that in Minneapolis there occurred a small outbreak of two cases of small-pox. The Board took immediate and vigorous action, and before even the reporters ascertained the fact that small-pox was in the city, the house had been thoroughly disinfected, the patients removed, and every one who had been in the house for a week was traced and quarantined and disinfected before the disease had an opportunity to disseminate.

The Conference then adjourned to meet at 2 P. M.

AFTERNOON SESSION, 2 P. M.

The Chair announced a continuance of the discussion on the question proposed by the State Board of Michigan to be in order.

Dr. H. B. Baker of Michigan, thought that diphtheria and scarlet fever, diseases which we have every year, should be treated by the same sanitary precautions as cholera and yellow fever. The northern half of this country suffers more from these than from either small-pox or cholera. They cause us in our State a thousand deaths a year. They are dangerous communicable diseases, and efforts should be made to exclude them. They are to a great extent imported.

Dr. Hewitt of Minnesota, disagreed. These diseases are always with us. The question is how to treat the infection after the disease is past. The question is often sent to our office what shall we do to prevent any further outbreak of these diseases? In our State the State Board has the power of local Boards. We have had instances of the tenacious character of the diphtheria infection. We have had cases where houses were thoroughly cleaned, that families returned to lose their last child. I think the main thing is to secure the thorough destruction of the infected surroundings. Either remove the sick child, or at least separate the healthy children.

The disease has frequently been concentrated in a single family. Our rules are to isolate the infected child, with a nurse if possible; keep the healthy children from the public schools of the same family. After death destroy all the clothes, thoroughly disinfect the room and do not let it again be occupied by a child. In scarlatina there is difficulty in getting at the mild cases in the schools which are liable to communicate the poison. How long the poison remains lurking, what relation it has to nationality, age and sex; how to isolate families; how to divide schools, &c,—these are all questions as yet unsettled.

Dr. Baker offered a resolution that scarlet fever and diphtheria be classed as pestilential diseases, and treated by quarantine.

Dr. Rauch, of Illinois—The question is who is to pay for this quarantine of foreign ships, that bring in all sorts of disease? I am opposed to emigration coming in without more stringent limitations than now exist. It was only a miracle that we escaped cholera last year. Dr. Rauch called attention to Dr. Holt, of New Orleans, last year, only detaing the Elysia ten days, with 614 passengers from Palermo, a city in the cholera-infected district. The more sanitary restrictions we throw upon emigrants the better for this country. He cited cases where the cholera had broken out after the emigrants had unpacked their baggage.

Dr. Lee, of Pennsylvania—One of the most important factors in diphtheria is the length of time which the poison clings to clothing. There was a time when diphtheria and scarlatina were not known in this country. They were introduced from abroad.

Dr. Hewitt had rather have the small-pox in his home than diphtheria. We all know that these diseases are as virulent and communicable as small-pox. I am in favor of quarantine against these diseases, if it is practicable. I see no object in the resolution unless it is to affect the public. I should suppose, of course, that ships with these diseases on board should be quarantined against.

Dr. McCormack—This is the most important matter before the Board. More people have died in Kentucky in any one year from these diseases than have ever died from yellow fever and cholera.

Dr. Baker—The resolution aims at something new. Nowhere in the United States are these diseases quarantined against. These two diseases kill more people than any other.

Dr. Thompson wanted to know if

the quarantine was to be kept up at all times?

Dr. Baker—Yes, sir, at New York and all maritime points. Diphtheria first got its hold in New York in 1857. It came among the Germans. There is no question but that the disease is imported. They do not quarantine against it

Dr. Reeve offered the following substitute for Dr. Baker's motion, which prevailed.

Resolved, That in the judgment of this conference the interests of the public health will be conserved by emphasizing the fact that diphtheria and scarlet fever are diseases of such highly contagious and infectious character that they should be dealt with by the most complete isolation of all cases, the most thorough disinfection of all infected articles and places, and by quarantining at the sea-board, and at all other places with the same care that is taken with reference to small pox and cholera.

Dr. Lee's resolution, offered at the morning session was then called up. Dr. Lee requested permission to offer the following substitute.

Resolved, That this Conference heartily endorses the bill now before the Congress of the United States, to establish seven thoroughly equipped quarantine stations on the Atlantic and Pacific Coasts and respectfully urges the importance of early action upon the same.

The resolution was adopted.

(At a subsequent session Dr. Lee moved a reconsideration of the vote by which this resolution was passed, which being carried, he offered the following amendment, which together with the motion as amended was passed, viz: to add to the resolution the following: And that this Conference also urges upon Congress the importance of establishing a distinct National Bureau of Health.)

The discussion on the questions proposed by the State of Michigan was then resumed.

Dr. Baker, after referring to the dangers to be apprehended from the existence of yellow fever in Florida at the present time offered the following resolution |which, after considerable discussion, was adopted.

Whereas: It is alleged that yellow fever is now present in Florida, a state not represented here because it has no State Board of Health, and which is in daily communication with other states and thus threatens all those of our States in which that disease can prevail, therefore

Resolved, That all Boards of Health in States adjoining Florida are urged to immediately and continually exercise extreme care to keep the fever from entering their States.

Resolved, That in case it is proved that yellow fever is present in Florida, Boards of Health of adjoining States should establish and maintain a thorough system of so-called inland quarantine, which means the inspection of travellers, the isolation of all infected persons and articles and thorough disinfection; these methods to be enforced with the least possible interference with travel and commerce consistent with the protection of the public health.

The questions proposed by the Provincial Board of Quebec and by the State Board of Vermont were then taken up.

"Powers which Provincial and State

Boards should have over locai boards." Discussion opened by Drs. Allen and Lachapelle.

"What legal authority ought State Boards of Health to possess in the absence of local boards?"

Discussion opened by Dr. Allen.

On motion, division *a* of the questions proposed by the State of California was included for discussion.

"Cannot a plan be devised to insure uniformity and increase of power in State Boards of Health by formulating in Conference, a draft of the extent of the increased powers desired in matters of Quarantine, compulsory notification of contagious diseases, and other sanitary matters within each state, neglected or refused by Local Boards, which formula may be expressed in a bill and laid before each State Legislature for passage?"

Dr. Baker was of opinion that State Boards should possess no mandatory authority over Local Boards. The State Boards should gather and distribute the facts, but the local authorities should have full authority in their localities. The State Board was the General to direct, and the Local Boards should carry the muskets.

Dr. Orme, from California, wanted to know what would be done in the case where the Local Boards refused to carry out orders. The Local Board of our State refused to isolate small-pox cases. The State Board had to interfere and compel isolation.

Dr. Hewitt—In Minnesota the orders of the State Board shall be obeyed by the Local Boards. The control of the infectious diseases of animals is in the hands of the State Board. Both State and local Boards work together, and last year we suppressed an epidemic of small-pox in one of the logging camps without the knowledge of the public press.

Dr. Jones, of Ohio, wished to know the details of the law. Can you force the Local Boards to be formed?

Dr. Hewitt—No, sir. We can't do that.

Drs. McCormack and Evans also took part in this discussion.

The Conference then adjourned until 7.30 P. M., at which time it was again called to order and the President announced the questions from the State of Michigan as the first business.

"What is each State Board of Health doing to advance sanitary science?"

"By the collection of statistics of deaths, and their causes."

"By the collection of statistics of sickness."

"By the collection of statistics of meteorological conditions coincident with sickness and deaths."

The roll being called the members in turn stated the system and efficiency of the collection of vital statistics in the different States represented in the Conference.

Pennsylvania being compelled to return a negative to all of the questions in consequence of the entire absence of any State system of registration in that old and highly civilized commonwealth.

The discussion of Dr. Hewitt's resolution and election of members of the committee which had been made the special order for 8 o'clock was then taken up, with the result previously recorded. During the retirement of a nominating committee appointed in this connection the question proposed by the State Board of Pennsylvania: "What should be the attitude of State Boards of Health towards leprosy?" was called up and the discussion opened by Dr. Lee, who maintained, notwithstanding the fashionable opinion of the day, that this disease is actively contagious and infectious and should be subjected to the strictest quarantine. Dr. Orme gave the history of cases in California, and stated that his Board adopted the most careful precautions with regard to the admission of lepers. Dr. Lee offered the following resolution adapted from that of a committee of the State Medical Society of California.

Resolved, That it is the sense of this Conference—

First: That a strict quarantine should be established against leprosy, and that all lepers attempting to enter this country should be returned to whence they came—

Secondly: That those already here or who develop the disease here should be rigidly segregated—

Thirdly: That it is eminently desirable that entirely distinct hospitals should be provided for such cases, and,

Fourthly: That the bodies of deceased lepers should be cremated or buried in lime and their personal effects be destroyed by fire, after being treated with powerful disinfectants.

The subject, being an entirely new one to the conference, was on motion referred to a special committee consisting of Drs. Lee, Bryce and Hewitt, to report at the next meeting of the Conference.

The Conference then adjourned to meet at 10 A. M. on Monday, May 7.

On reassembling at that time, Dr. Lee asked for a reconsideration of his resolution in regard to quarantine, and proposed the amendment already recorded as passed.

Discussion: The question proposed by the State Board of Vermont.

"What sanitary regulations are necessary in and about country residences?" was then discussed in a carefully prepared paper by Dr. Allen, of Vermont.

Unfinished business being in order, the report of the committee appointed to draft a Constitution and set of by-laws for the Conference.

DR. L. F. SALOMON, of Louisiana,
DR. H. B. BAKER, of Michigan,
DR. J. D. PLUNKETT, of Tennessee,
Committee, was then called for.

Dr. Baker reported the following plan, which on motion was unanimously adopted.

CONSTITUTION OF CONFERENCE OF STATE BOARDS OF HEALTH.—The name of this association shall be "The National Conference of the State Boards of Health.

Membership.—The members of this Conference shall be the executive officers or other delegated representatives of the State Boards of Health of the United States, and of the Provincial Boards of Health of the Dominion of Canada.

Dues.—Each Board represented shall pay to the Treasurer of the Conference five dollars per year.

Votes.—Whenever demanded by two delegates, any question shall be determined by a vote, each State being entitled to one vote.

Officers.—The officers of this Conference shall be a President, Secretary and Treasurer.

The duties of each officer shall be those which are usually performed by such officers, and collectively the officers shall be an executive committee to make suitable provisions for meetings of the Conference, for programme, etc.

Parliamentary Rules. — Cushing's Manual shall be the guide to parliamentary action, in cases of question.

Amendment of this Constitution.— Notice of the nature of any proposed amendment of this Constitution shall lie upon the table from one annual meeting to another before coming to a vote. Such notice having been given, this Constitution may be amended at any regular meeting of the Conference if the majority of States and Provinces represented vote in favor of such amendment.

The following reports were then received and the committees continued. The next meeting was left to the decision of the Executive Committee.

Report of Committee to make a Codification of the Health Laws of the different States and Provinces.

DR. A. G. YOUNG, of Maine,
DR. H. B. BAKER, of Michigan,
DR. WM. OLDRIGHT, of Ontario,
Committee.

Report of Committee on Collective Investigation of Diseases.

DR. C. H. FISHER, of Rhode Island,
DR. S. W. ABBOTT, of Massachusetts,
DR. BENJ. LEE, of Pennsylvania,
Committee.

Report of Committee of Vital Statistics.

DR. H. B. BAKER, of Michigan,
Committee.

The election of officers for the next year resulted in the rëelection of President McCormack, of Bowling Green, Ky. Dr. C. O. Probst, Secretary of the Ohio State Board of Health, was elected Secretary, and Dr. Baker, of Michigan, Treasurer.

Dr. Benj. Lee offered on behalf of the State Board of Pennsylvania to undertake the printing of the proceedings of the present Conference, and to furnish copies to each Board, as required, at moderate expense. The offer was accepted with thanks.

A vote of thanks to the Committee of Arrangements, Dr. Byron Stanton, Health Officer of Cincinnati, and Dr. John D. Jones, President of the State Board of Health of Ohio, for the satisfactory manner in which they had discharged their duty, and for the many courteous attentions received, was adopted.

On motion the Conference then adjourned *sine die.*

◆

IMMUNITY OF THE CHINESE FROM TYPHOID.—The interesting observation is made by Dr. Underwood, Customs Medical Officer at Kiukiang, China, that the comparative immunity of the Chinese in that region from typhoid fever, notwithstanding most of the factors favoring it are present in abundance, may be attributed to the fact that "cold, unboiled water is rarely or never used when tea can be had."

◆

IMPROVING THE NEW YORK QUARANTINE STATIONS.—The supply bill of the last State Legislature contains, we are informed, provisions for the better equipment of the quarantine establishment at this port. It provides $50,000 for general repairs, $25,000 for a new hospital ship, $5,000 for the hospital, $2,500 for repairing the docks, $121,843 for putting Hoffman Island, the boarding station, and the Health Officer's residence in order, and $20,000 for a new tug ; making a total of $224,343.

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EDITORIAL.

TO OUR READERS.

We desire to call the special attention of our readers to the new dress in which "THE ANNALS" reaches them this month. We have started a printing office, completely equipped with all the modern appliances, including the newest and plainest of type, in order that we may give to our friends the very best mechanical work that can be produced. We are not now dependent upon the uncertainties of printers, we have our own establishment, and we have, consequently, every detail of the journal under our own immediate, personal supervision.

With the arrangements that we have already announced for literary productions, combined with our now improved facilities for mechanical work we feel no hesitancy in claiming that we will be able to produce the most valuable, and, at the same time, the handsomest journal published in this country.

Much of the material intended for this number has been crowded out, owing to the publication of some of the valuable papers read before the Lewisburg Convention.

THE SANITARY CONVENTION AT LEWISBURG.

One of the most striking and satisfactory evidences of a rapidly growing interest in hygiene is to be found in the very decided interest that is being displayed in the Sanitary Conventions that are rapidly multiplying in the various parts of the country. The example that has been set by the State Board of Health of Michigan of holding Sanitary Conventions in various parts of the State is being gradually adopted by other States, and it seems to us that there is no better work before our State Boards than the holding of such Conventions.

What we really want to do is to educate the public; we want to enlist the intelligent coöperation of the better class of persons, we want to make common property that knowledge which we, as Sanitarians, possess, and in no way can we better accomplish this end than by the frequent holding of Sanitary Conventions.

Our own Board has just had a very successful meeting of this kind in the town of Lewisburg; successful for two reasons; first, because it was attended by the best people in the town and, secondly, because the audience was largely composed of ladies. This last is a most important consideration, for, if, in our warfare against disease, we can secure the interest, sympathy and aid of the ladies we have gained a wonderfully powerful position. At Lewisburg the ladies were present in force and were the most attentive of listeners, for which we heartily thank them. The president of Bucknell University (who surprised us all by his youthful appearance) made a most beautiful address of welcome, with which we hope shortly to favor our readers.

It was expected that Governor Beaver would make the introductory remarks; but he was unable to be present, and Lieutenant Governor Stone came in his stead. Speaking of the objects of this meeting, he said that the Legislature had provided for the protection of the people from dynamite and nitro-glycerine explosions, and that the Board of Health were laboring to protect the people from other dangers, from sickness, from contagions. That there was a necessity to provide against impure food and impure water.

The State Board went upon the principle that "an ounce of prevention was worth a pound of cure." They were trying to arouse an interest in the people upon sanitary matters. He closed by thanking all for their attention and hoped the work of the convention might be fruitful of great good.

Replying to the address of welcome, Dr. J. H. M'Clelland, of Pittsburg, returned the thanks of the Board for the generous welcome extended. He said the kind hospitality of this community was known of throughout the State. It seemed to have been inherited by the people from past generations—in fact, even from the days of the Indians, for that noble red man, Logan, whose home was in this vicinity, had left a record that he would allow no white man to go away hungry. He spoke of the work of the Board—that notwithstanding the great task before them, the Board was limited to an appropriation of but $5,000 to pay the expenses incurred—that therefore, the hearty coöperation of the people was the more necessary. He closed by again returning the thanks of the Board.

Our Board has been anxious that "Sanitary Protective Associations" should be formed throughout the Commonwealth, and we are glad to learn that as a result of an able paper on this subject, read before the Convention, by our Secretary, Dr. Lee, there is a good prospect of the organization of such an association in Lewisburg.

The President of the Convention (Dr. S. T. Davis, of Lancaster) announced that letters had been received from the following gentlemen, regretting their inability to attend the Convention and expressing their interest in its objects: Governor Beaver, Prof. Alfred Stillè of Phila., Dr. W. H. Seibert of Milton, Dr. D. W. Williams of Shenandoah, Hon. D. H. Hastings, Rev. Edward D. Irvine of Eric, Prof. V. C. Vaughan of Michigan, Dr. J. Cheston Morris of Philadelphia, Dr. L. H. Taylor of Wilkesbarre and others.

A letter was read from Rev. Chas. E. Edwards, pastor of the Presbyterian church at Mifflinburg, in which he urged that the convention should pass "a resolution condemning public funerals in cases of contagious diseases," classing it as a "barbarous and criminal practice."

Dr. Atkinson thereupon offered the following resolution, which was unanimously adopted:

Resolved: That this Convention endorses emphatically the regulation contained in the model ordinance of the State Board of Health, which forbids the public burial of those who have died of contagious diseases, viz: Small-pox, scarlet fever and diphtheria.

A committee, consisting of Dr. J. B. Walker, Hon. M. C. Watson and Hon. Horace P. Glover, was appointed to prepare resolutions expressive of the feelings of the convention in regard to the suggestions contained in the address of the chairman (Hon. S. T. Davis), and the report received was, that

"The committee appointed to consider the suggestions contained in the valuable address of the president, with reference to the importance of additional legislation on sanitary matters, beg leave respectfully to report the following resolutions for the consideration of the Convention:

Resolved: That the State Sanitary Conveuvtion now in session at Lewisburg desires to express its conviction that in order that the State Board of Health may be able to discharge satisfactorily the important duties assigned to it in the protection of the public health and the registration of vital statistics, it is essential

1st. That every township in the State should have some form of sanitary organization prescribed by law.

2d, That all county registration officers should be required to report to the State Board of Health.

3d, That the appropriation for the work of the Board should be very materially increased.

Resolved: That the officers of this Convention be instructed to transmit these resolutions to His Excellency, the Governor of this Commonwealth, with the request that he call the attention of the Legislature to these subjects in his next message to that body."

Hon. M. C. Watson, State Senator from Schuylkill County, strongly urged that a Sanitary Convention be held in Shenandoah, and we heartily endorse his suggestion.

It will be our pleasure to lay before our readers from time to time the papers that were read before this Convention and we hope that it will not be long before we can chronicle the proposed holding of another such meeting.

◆

DREAMS AND DIET.—I find that I can control my visions by dieting, (says a writer in the *Buffalo Courier*). If I wish to enjoy a calm night, I eat toast and milk before retiring. Squash-pie acts on the bumps of combativeness and acquisitiveness. The consumption of a squash-pie has led me to slay a man for his money within fifteen minutes after going to bed. To make my brain a chamber of horrors, I sit down an hour before bed-time and eat three sardines, six olives, a little Roquefort cheese with crackers, washing down with a bottle of Bass' ale. Before morning I charge single handed with my razor on herds of wild horses and jump from sundry steeples.

NOTES AND COMMENTS.

The Harm of Moderate Drinking.—It is very well known that hard drinking surely kills; (says the *Medical Record*) it is equally well-known that moderate drinking is usually injurious. There are, however, two forms of the latter habit; in one the individual drinks moderately and only at his meals, in the other, he drinks over a bar, taking a "nip" of whiskey, a "cocktail," "fizz," etc., in accordance with the idiosyncrasy of his palate, his geographical location, or personal associations. These last named indulge in what our continental brethren call "nipping" or "pegging," and the practice of nipping has been apparently shown by Dr. Harley and others to be injurious to health and life.

Dr. Harley gives the following telling statistics:

Death-rate of men between the ages of twenty-five and sixty-five.

Men Exposed to the Temptations of "Nipping."

	Liver diseases.	Urinary diseases.
Commercial travelers, - -	61	44
Brewers - - - - - - -	96	55
Innkeepers, publicans, vintners, barmen, and waiters, - - - - - - -	240	83

The comparative death-rates of men of the same age engaged in other industries, not exposed to the temptation of "nipping," are again as follows:

Death-rate of Men not Exposed to the Temptations of "Nipping."

	Liver diseases.	Urinary diseases.
Gardeners and nurserymen -	18	39
Printers - - - - - - - -	28	30
Farmers ani graizers - -	41	31
Drapers and wharehousemen	35	37

In addition to the above Dr. Harley cites the following statistics of beer, which apply to Prussia:

Probable Duration of the Life of Men.

Age.	In the liquor trade.	Not in the liquor trade.
25 - - - - - - -	26.23	32.08
35 - - - - - - -	20.01	25.92
45 - - - - - - -	15.19	19.92
55 - - - - - - - -	11.16	14.45
65 - - - - - - -	8.04	9.72

Further statistics are given, showing the extraordinary excess of mortality from liver disease among innkeepers, bar-tenders, vintners, waiters, and publicans, as compared with persons in other occupations. The ratio is as six to one.

To all this it may be said, on the other hand, that nothing lies like figures, and that, after all, the mortality rate is not greater, for example, in a whiskey-drinking country like Scotland, than in presumably temperate regions like certain States of New England or the West. It is more than probable that Dr. Harley's figures point to the truth; but the question rises, in view of the pretty even range of mortality in countries of temperate and "nipping" habits, whether, if liquor is taken away, some other death-producing agency does not set at work. We believe that the medical profession must, at any rate, accept the fact that "nipping" shortens life.

◆

Counterfeit Milk.—Recently a person representing himself to be the agent of an Iowa dairy-farm called at the office of an ice-cream manufacturer in St. Louis and desired to make a contract to furnish him with the milk from which to make his ice-cream. The price named was low, and from this and other indications the manufacturer became supicious of the Iowa company's milk. He secured a sam the milk and took it to the St. Louis Dairy Company's laboratory to be analysed, by their chemist. The milk was carefully analysed, and the dairy company's chemist saw at once that there was a dangerous and unusual counterfeit. It is a perfect imitation in every respect, and nothing but a chemical analysis would discover its true character. It is apparently rich and wholesome and pleasant to the taste. The amount and proportions of the solids that it contains are the standard test of the purity of milk. The following table gives the component parts and the proportions in pure milk :

AVERAGE PURE MILK.

Water - - - -	86.23
Solids - - - -	13.77
Casein - - - -	3.23
Albumen - - - -	0.50
Butter -	4.50
Milk sugar - - -	4.93
Salts - - - - -	0.6

The dairy company's chemist's analysis of the Iowa firm's milk gives the following results :

Water - - - -	81.3
Fat supposed to be cotton-seed oil or some similar substance - - -	2.6
Chemical substances corresponding to caseine and milk sugar, whose nature is not yet determined - - - -	15.0
Mineral salt, supposed to be nitre or some other similar substance - -	1.1
Total - - -	100.0
Percentage of solids -	18.7

The difference between the Iowa company's product, and pure milk will be readily perceived by reference to the tables above. The chemist who made the above analysis states that he has every reason to believe the substances that in the Iowa "milk" take the place of butter fat, caseine, milk sugar, and ash are all injurious. Exactly what these substances are the chemist is not yet prepared to say. He is now at work upon the analysis, however, and hopes to be able to determine the question in a few days.

The Iowa company that is engaged in the manufacture of this spurious milk has an agent in St. Louis who is busily engaged in canvassing the restaurants, milk-dealers, ice-cream manufacturers, and others in the city who use large quantities of milk, and investigations have developed the fact that large quantities of the spurious product have already been sold there.

A law passed a little more than a year ago fixes the standard of purity for milk in Missouri at 12 per cent. of solids, including 2.8 of butter fat ; and of cream at 12 per cent. of butter fat. It will be seen that the Iowa product lacks a great deal of conforming to this standard, and for the sake of the public health it is to be hoped the proper authorities will enforce the law against the injurious counterfeit. (*Journal of the Am. Med. Ass.*)

* * *

HEAD-DRESSES.—Thomas Conecte, a Carmelite monk,—says the *Medical Record*—was burnt at the stake in 1434. His principal offence was his vehement sermons against the enormous head-dresses of the period. They were so high and broad, with two flaps on each side, of such unaccountable size that it was impossible for a fashionable woman to pass through a door, except sideways.

Hints on Food.—Prof. V. C. Vaughan's paper on Food, (*Sanitary Era*), contained valuable hints for the instruction of the family purveyor, from which we condense as follows:

BEEF.

A pale pink color indicates that the animal was diseased. A dark purple hue is evidence that the animal has died with the blood in its body, or has suffered from some acute febrile affection. Good beef has but little odor, and is elastic to the touch. Meat that is wet and flabby should be discarded.

VEAL, LAMB AND PIG.

The flesh of young animals is more tender than that of the adult, but is less easily digested. The time required for the digestion of veal is five hours or more, while beef is digested in from two and a half to three hours. The tissues of the young animal are less stimulating, less nutritious, and more gelatinous than the tissues of the adult animal. On the other hand, an animal may be so old and poorly nourished that its flesh well-nigh defies both mastication and digestion.

POULTRY.

The flesh of no bird is in itself poisonous. The same is true of the eggs of all birds. The light meats of birds are more easily digested, less rich in nitrogen and in flavor, than the dark meats.

FISH.

Undoubtedly the flesh of some fish is poisonous. Fish should be discarded if the water in which it is boiled blackens silver. Fish caught from putrid water should not be eaten. The flesh of such fish is yellowish, soft, spongy, and of foul odor. Fish should not be left in the water after they are dead, but should be packed in ice.

Carbonate of Soda and Milk.—At a recent meeting of the Conseil d'Hygiène, (*Brit. Med. Jour.*) M. Proust presented a report on the system of preserving milk with carbonate of soda. He considers that this method should be prohibited. Carbonate of soda prevents the milk from turning sour, but produces a sodium lactate, which is purgative, and causes diarrhœa in infants.

◆

House-to-House Inspections.—We would earnestly urge upon local health boards that the most important work in which they can engage just now will be to institute systematic, thorough house-to-house inspections in their localities; ferreting out nuisances prejudicial to health and removing them. Such work will produce infinitely more in results than all the preaching and circulars that can be imagined.

◆

Chins.—An exchange says: "A long chin declareth a man to be peaceable, yet a babbler. They that have little chins are much to be avoided and taken heed of, for they are full of impiety and wickedness, and are spies like unto serpents. If the end of the chin be round, it is a sign of nice manners. But the chin of a real man should be square.

:o:

National Patrol of the Coast.—In order to assist local authorities in the maintenance of quarantine against the introduction of infectious diseases, the President has determined to establish, by means of the vessels of the revenue marine, a national patrol of the coast of the United States, so far as may be practicable.

THE KITCHEN.—Dr. E. A. Wood, in his lecture upon the popular subject of Food and Cooking, paid the following eloquent tribute to the kitchen: "From prehistoric time to the present, man has had a conventional centre around which clustered his hopes and on which grew his methods; the point on which civilization crystallized. Erstwhile it was the sacred oracle with the priestess of the shrine—that fatal guiding star of superstition. Then it was the Olympic games which lifted men into the presence of the gods who presided over their festivities. At another time it was the Crusaders for the recovery of an apocryphal tomb, when Europe was a camp of soldiers and a bastile of monks. In this, our day, the erratic finger of fate points to the almighty dollar, and men bend the knee to Mammon.

"Would that I could crystallize civilization around its true and healthful centre—the kitchen. Yes, the kitchen, the homely, Saxon kitchen! True, no poet has enshrined it with laurel, and no song has sounded its simple harmonies; and yet, more potent than oracle, mightier than Crusader, grander than Olympus, and blessed beyond what Mammon can buy, the kitchen stands, in its simple granduer, the embodiment and the spirit of all that is best in human life. Around it cluster the jewels of affection—love, hope, joy, peace, health, and a long and happy life.

"Wives, mothers, daughters, sisters, and sweethearts of America! make the kitchen your household shrine; elect yourselves priestesses of the oracle. Train yourselves in the art of cooking, that art which in importance transcends all other arts. The true wife is the true artist, and the poor man's wife should be the ablest artist of them all. The kitchen should be woman's studio, and her work therein a picture on which she devotes a lifetime of pains and skill; a picture so pretty and tidy that no pencil could paint, no pen portray, and no tongue describe; a picture so bright and fair as to overwhelm the husband's heart with a halo of gladness and glory."—*Household Gazette.*

* * *

THE PREVENTION OF DIPHTHERIA. Dr. Agustus Caille publishes a practically valuable article on this subject in the *Medical Record* from which we deduce the following propositions.

Enlarged tonsils should always be reduced; decayed teeth should be promptly removed.

Parents should inspect their childrens' mouths and throats each day before sending them to school.

Children suffering from simple sore throat (apparently) should not attend school until they are quite well.

Adults with sore throats should not mingle with children.

The kissing of children upon the lips should be forbidden, and parents themselves should set an example in this direction.

Children old enough to gargle and rinse their mouths should be taught to do so after each meal, a weak solution of one of the harmless antiseptic chemicals (such as chlorate of potash) to be used; and in the case of young children such solutions should be dropped into the nostrils regularly twice a day, or oftener if symptoms of nasal catarrh supervene.

HOW LONG A CHILD SHOULD SLEEP.—A healthy baby for the first two months or so spends most of its time asleep. After that a baby should have at least two hours of sleep in the forenoon and one hour in the afternoon, and it is quite possible to teach almost any infant to adopt this as a regular habit. Even to the age of four or five years a child should have one hour of sleep, or at least rest in bed, before its dinner, and it should be put to bed at 6 or 7 in the evening and left undisturbed for twelve or fourteen hours.

Up to the fifteenth year most young people require ten hours, and till the twentieth year nine hours. After that age every one finds out how much he or she requires, though, as a general rule, at least six to eight hours are necessary. Eight hours' sleep will prevent more nervous derangements in women than any medicines can cure. During growth there must be ample sleep if the brain is to develop to its fullest extent, and the more nervous, excitable, or precocious a child is, the longer sleep should it get if its intellectual progress is not to come to a premature standstill, or its life be cut short at an early age.—Dr. C. Fred. Pollock, in *The Chatauquan*.

◆

NOTIFICATION OF CONTAGIOUS DISEASES IN NEW HAVEN.—Incredible as it must seem to the sanitary authorities of other cities, no law exists in the Town or City of New Haven, requiring the occurrence of dangerous contagious diseases to be reported to the Board of Health. It is still more remarkable that the Board of Health of New Haven is wanting in the authority (possessed by every other local Board of Health in Connecticut) to enforce such precautions against the spread of contagion as are necessary to protect the public. Hence it happens, when outbreaks of infectious diseases occur, only such protective measures are observed as may be undertaken voluntarily by the parties directly concerned. It is therefore not surprising that little local epidemics in the city, as the recent ones of small-pox and diphtheria, get well established before the Board of Health hears of them; and then it can only attempt by proffered advice and some assumption of authority to correct or arrest them. Connecticut has a most efficient State Board of Health and the power given to it should be greatly enlarged.

◆

SMOKERS' VERTIGO.—Dr. Decaisne recently investigated a number of cases of vertigo in smokers. Out of sixty-three patients forty-nine were between fifty and sixty-six years of age. More than half of them suffered in addition from digestive troubles, with constipation alternating with diarrhœa, insomnia, palpitations, dyspnœa, and diuresis. In a third of the number there was marked intermittence of the pulse, and granular pharyngitis, while others suffered from aphthæ, amblyopia, etc. Thirty-seven were persons who smoked habitually on an empty stomach, and these suffered from vertigo, principally in the morning. The vertigo generally coincided with suppression of perspiration and diminished excretion of urine. The treatment consisted mainly in regulating or suppressing the cause, but thirty-three out of thirty-seven patients ceased to suffer on merely refraining from smoking on an empty stomach.

SOME SAMPLES FROM SAMPLE ROOMS.—Rev. Madison C. Peters based his sermon recently on "The Analysis of Some Samples from Some of our Sample" Rooms. "This gin I hold in my hand," said he, "from a reputable saloon, is nothing more than neutral spirits—turpentine, vitriol, etc. I applied a match to a small quantity. It burned a blue flame. No wonder the drunkard sees the blue blazes. I took the white of an egg, quite equivalent in substance to the fluids of the brain and of the stomach, poured over it a little of this gin and it slowly congealed, thickened and hardened like leather. This is what goes on exactly in the brain or stomach to a greater or less extent when you drink alcohol in any shape or form.

"This whiskey is composed of neutral spirits—sulphate of zinc, acids and fusel oil. Brandy in six days will consume fresh meat. This whiskey hardened a raw oyster, a very digestible thing. Alcohol makes food indigestible, hence the prevalence of disorders of the digestive organs among men who drink. Sometimes great drinkers live to an old age because they are pickled. Whiskey is good enough to preserve corpses, but don't let it turn you into a corpse.

◆

THE WORK OF THE DE-HOOFER.—From *London Truth* we learn that since the high heel and pointed toe have had time to do their work, the Parisian chiropodist is rising to as money-making a position as the American dentist. There are women who are able, when the fine world is in Paris, to make from three to five pounds a day by what is called de-hoofing.

The de-hoofing process begins with a warm bran or potato starch foot-bath, followed by a quick plunge in cold water, after which there is shampooing with eau-de-Cologne, or something else, to help a reaction. Then there is a gymnastic pulling out and moving up and down and from side to side of individual toes, which reminds one of the piggy-wiggy game which nurses play with the pedal extremities of babies.

The toes are manipulated and exercised separately, until each is limber and lively. The sole of the foot is also enlivened thus. The patient leans with both hands on a pair of props and places the foot on a broad horse-hair band, which works from side to side. Then comes more hand-rubbing this time with glycerine, followed by friction with small brushes and instruments like drawing-stumps. The nails are carefully attended to. All dead and hard skin is carefully removed, and finally the ankle and insteps are put into gymnastic training. At the end of, say an hour, a pair of feet which have been martyrized with high heels and pointed toes feel equal to dancing, jumping or taking a long walk.

◆

SOUR MILK AND BUTTERMILK IN THE NUTRITION OF INVALIDS AND OTHERS.—Dr. Demuth advocates the use of sour-milk and buttermilk as cheap, effective, and easily assimilable nutritive agents. Both are easily digested, on account of the finely divided condition of the caseine and the presence of acids. He also says that buttermilk is useful in all cases where a milk cure is indicated, and is particularly to be recommended in consumption. Sour milk has shown itself to be very beneficial in scrofulosis, neurasthenia, hypochondriasis, in convalescence, in diseases of the organs of deglutition, chronic catarrh of the air-passages, nervous disturbances following excessive or exclusive meat diet, dropsy, albuminuria, and Bright's disease. It is also useful in diabetes mellitus. Both forms of milk are efficacious in chronic metallic poisoning and inflammatory and febrile conditions, especially in typhoid fever. They are not to be used in ulcerous processes in the alimentary canal, a fact not always considered in ulcer of the stomach, ulcerating cancer, and tuberculous ulceration of the intestines. —*Vereinsblatt fur Aerzte.*

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WM. R. WARNER & CO. HAVE ISSUED THE FOLLOWING NOTICE TO PHYSICIANS:

"We take this method of denouncing the circulation of certain erroneous reports, as being the outcome of ignorance or malice.

We have no connection with the firm of H. H. Warner & Co., of Rochester, who make "Safe Remedies" and other patent medicines.

Our advertising is to the Medical Profession and our Pills and Products, (Warner & Co's.) have been used and held in esteem by the most eminent Doctors during the past thirty years in the United States and in foreign countries.

The therapeutic value of a remedy is ascertained by the medical practitioner, and it is the province of the Manufacturing Chemist to prepare the various medicinal preparations in the most correct, compatable, palatable and convenient manner by the aid of skill acquired by years of practice and experience.

It seems to be necessary to specify Wm. R. Warner & Co's. Pills and Bromo Soda with Caffeine to obtain what you want."

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MONEY SAVED BY SANITATION.—Medical men have long been familiar, (says the *Pall Mall Gazette*), with the fact that sanitation has been a saving to the community at large in doctors' bills, in nursing, and even in days of labor to the industrial classes. But it has been difficult to put results into figures so as to impress the public mind. Mr. Brudenell Carter attempted this in his inaugural address to the College of State Medicine. Every case of fever, he calculated, cost the community ten dollars. The reduction in the annual death-rate from fever to 484 per million from the 1851-60 rate of 908 per million represented a total saving of $1,500,000, "but of this no one seemed conscious;" while the annual cost of scarlet fever at the present time was $2,000,000 a year. If, therefore, we could trace scarlet fever to a definite cause, as a bovine disease communicable by milk, we could adopt precautions which "would save the country every year somewhere about half as much money as the recent conversion of stocks, besides much misery." Here is new light upon disease. It is increasingly preventable and as we reduce its virulence and range we save money.

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A WORTHY EXAMPLE SET BY DR. STACKHOUSE.—Young Dr. Stackhouse, who is mourned by all who knew her, (says the *Ledger*), had an insurance on her life, a portion of which she directed should go to build up the new department of hygiene in the Woman's College, and aid the gymnasium, in which she took such delight. Her influence on the students of Swarthmore, where she taught some classes in hygiene, was most marked; unrequested, they adopted school-dresses, that gave them room to breathe in. Would that some such good woman doctor could stand in the vestibule of some of our fashionable schools and direct, as the girls come in, that lacings be cut, sleeve-sizes enlarged at the "arm-hole" of dresses, and French heels be cut down! It is almost a burlesque on education to see the pretty crowd on their way to school, arrayed in such tight tailor-made suits that they are doing themselves more harm than good by jumping rope when so tightly bound across shoulders and waist. You don't catch the tailors making boys' clothes that way.

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WOOLLEN UNDER-CLOTHING IN WARM WEATHER.—Most persons have usually had the idea that while it was well to wear woollen under-clothing in winter it should be abandoned when summer sets in. That there is no valid foundation for this belief those who stop to reflect must realize. There need not be any more warmth in wool properly prepared than in cotton, while, since it favors evaporation from the surface by rapid absorption of perspiration, it must in reality, tend to lower the temperature of the body, a most important consideration in these sultry days. Of course, we would not want to wear the heavy woollen under-clothing usually sold in winter, but if we will look at the beautiful articles prepared after the Jæger system and to be seen at the store of Scribner & Sulzer, 1104 Chestnut Street, we will find just what we want to make us comfortable during the heated season that is now coming for us.

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COMSUMPTION OF THE LUNGS.—Dr. B. F. Host, reading a paper before the Missouri State Medical Association, (*Med. and Surg. Reporter*), says that pulmonary consumption is not on the increase. He finds it not so prevalent here as in the older countries of Europe where population is denser. He thinks it contagious, but not in the same manner as disease is usually considered contagious. He deplores the wonderful ignorance of the danger of the disease among the old and the young, and hopes that knowledge will be disseminated among the people concerning this disease. He thinks many errors are made on the part of physicians, especially in sending patients to other climates, and that at least six months should be taken in passing from a low to a high altitude.

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THE USE OF STIMULANTS BETWEEN MEALS.—Speaking of the abominable and dangerous habit of "nipping," Dr. George Harley, in the *Popular Science Monthly*, characterizes it as the most pernicious of all forms of drinking. A man who habitually indulges in a single glass of sherry in the forenoon, a brandy-and-soda in the afternoon, and a glass of whiskey-and-water in the course of the evening, does far more injury to his constitution than one who partakes of a large quantity of alcohol stimulants at meal times."

THE HEALTH OF NEW YORK AND LONDON.—The death-rate of London is 20 per 1,000 while that of New York is 26 per 1,000. Dr. Roger S. Tracy, Register of Records of New York, thus explains this difference:

1. That the excess of mortality in New York, as compared with London, is due chiefly to diphtheria and croup, diarrhœal diseases, phthisis, and kidney diseases.

2. That if the death-rate from these diseases were the same in New York and London, the mortality from all other causes remaining as at present in both cities, the general death-rate in the two cities would be almost precisely the same.

3. That the over-crowding in New York (16.37 persons to a dwelling, in 1880, as compared with 7.8 in London), and the trying climatic conditions, render it very improbable that the death-rate of this city can ever be reduced as low as that of London.

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THE APPLICATION OF HYGIENE TO THERAPEUTICS.—When we commenced to read the "*Address in Medicine*" before the last meeting of the American Medical Association by Prof. Roberts Bartholow, we felt sure that before concluding the same we would surely find some reference to the growing importance of hygiene, for the simple reason that we never read any truly masterly address now-a-days, wherein such reference is wanting. Sure enough, Professor Bartholow thus concludes his address:

"There is a vast field needing cultivation in the application of hygiene to therapeutics. The comparatively new method of the dietetic treatment of disease offers us remedial agencies which certainly approximate to exactness in method and surety in result."

This little sentence may be added to the "*Straws*" we have already published as indicating the way the professional wind is blowing.

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LACTATED FOOD.—"The principle element in woman's milk is the sugar of milk" is the watchword of the enterprising house of Wells, Richardson & Co., and acting upon this principle they make their artificial food to contain one fourth its bulk of sugar of milk. From analysis we are able to say that this food apparently meets most excellently the requirements of an artificial food, but since the "experimentum crucis" is the test of actual experience, we would urge our readers to give this food a practical trial. If our friends will write to Wells, Richardson & Co., of Burlington, Vt. (*mentioning this journal*) and ask for it, they will receive, free of all charge, a package of lactated food which they can try. We advise all to write for it.

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ROSCOE CONKLING'S SKILL AS A SWIMMER.—According to the *New York Tribune* Mr. Conkling (whose physical development was a matter of national repute) was a great swimmer. He could float in the water for hours, and is said to have gone to sleep floating, and to have slept for an hour or more in that position. He was "notional" about his bathing costumes. He kept two, and alternated their use, so that he might always be sure his suit was wholly dry when he put it on. After coming out of the water he was invariably rubbed dry and then sponged with alcohol.

Typhoid Fever Traced to a Dairy.—We all know that epidemics of typhoid are frequently traced to dairies, but it does no harm to multiply instances that the lesson may be the more firmly impressed. A German doctor now reports an epidemic wherein he had 43 patients living in different parts of a city, who had nothing in common, save that they all used milk from the same dairy. There had been some mild cases of the disease previously at the dairy, and the evacuations from the patients had been emptied upon a dung-heap or into a cesspool which were in close proximity to the well from which the water was drawn to wash the milk cans. The moral is obvious; "he who runs may read."

Cause of Death in "Blizzards."—Dr. Markham claims in the *Journal of the American Medical Association* that the greater number of those who lost their lives in the "blizzard" of the North-west last winter, were not frozen to death but really died of suffocation. Many of the bodies, when found, were in the position of grasping or clutching at their necks or throats. The terrific hurricane force of the wind, loaded with falling snow—the latter being by a falling temperature, whose degree of and suddenness have no recorded parallel, converted into dry crystals, and thence by the gale ground to a fine, dry ice-dust—these conditions produced a state of the atmosphere as unfit for respiration and aëration of the blood as is water for warm-blooded animal life.

The Money Value of Sanitary Work.—If there is any doubt as to the amount of money expended for sickness,—said A. Arnold Clark before the Traverse City Sanitary Convention—reflect that there are four thousand doctors in Michigan. They get each year, at least, 1,000 each. Then that means $4,000,000 which we pay for sickness. If Ben Franklin was right when he said "time is money," then sickness is poverty, and every local board of health that does its duty is an anti-poverty society. How much better it would be to make anti-poverty societies of these doctors and pay them to keep us well and then dock them their wages when we get sick.

Yellow Fever in Florida.—Dr. Jerome Cochran, of the State Board of Health of Alabama, in a recent report to the Supervising Surgeon-General U. S. M. H. S., has stated that the late epidemic of yellow fever in Florida was not introduced into the State by the usual trade channels, but by smugglers. This confirms unofficial statements received some weeks since. Dr. Cochran states that the last case was discharged May 11, and the last death occurred May 8, and that there have been active precautions taken to prevent the reappearance of the disease.

Tight-Lacing and Gall-Stones.—From the *Journal of the American Medical Association* we learn that Prof. F. Marchand of Marburg believes that the intermittent compression of the gall bladder produced by tight-lacing, favors stagnation of bile and the formation of gall-stones. He also believes that this same pressure may be the exciting cause of cancer of the liver among women.

THE ANNALS OF HYGIENE.

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COMMUNICATIONS.

THE DISPOSAL OF THE DEAD.*

BY P. F. HYATT, M. D.,
OF LEWISBURG, PA.

Mr. President, Ladies and Gentlemen of the Convention :—The disposition of the dead has in all ages and in all lands awakened a deep interest among the living ; not so much because they realized its importance from a sanitary standpoint, as their veneration for the memory of the departed.

It has been our life-work to feed, clothe and protect these bodies of ours, and we do not take kindly to anything that savors of ill treatment after death. But as we proceed, let us inquire if we have not been deluded by false notions.

I am aware that public sentiment is strongly averse to inroads on the customs of the times, and we therefore accept the task of rowing against the tide and take the risk of being misunderstood.

The primogenitors of our race with little or no knowledge of the laws of health, lived as many centuries as we do decades, and as there can be no effect without a cause, it behooves us to ask why we have grown weaker, while we claim to have grown wiser.

If the people upon the new earth lived longer than we, it must have been because they inherited constitutions more nearly perfect than ours ; and lived in a world where the earth, air and water had not become contaminated with disease germs.

They did not realize however, the necessity of keeping pure the virgin soil committed to their care, and we, their short lived descendants, reap the fruits of their sowing.

But I am glad that we live in a day and age that is waking up to the importance of sanitary science ; a subject second only to a preparation for eternal life, if length of days and robust health are worthy objects of consideration.

People exercise commendable zeal in avoiding things which produce sudden death, but bear patiently anything which undermines their lives and health by slow degrees ; giving themselves no uneasiness about results which follow a few years hence.

Life (which precedes death) has been defined "as that state of the animal or plant, in which its organs are capable of performing its functions." When that capability ceases, death is the result, and as organization follows in the pathway of life to build up, so does disorganization follow in the pathway of death to destroy, or rather to separate into its elemental parts, and that atom of carbonic acid gas which is set free by decomposition and combustion, to perform its allotted function in the world, will on the morrow feed the grass that feeds the ox that feeds the man, and so on ad infinitum.

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*Read before the Sanitary Convention at Lewisburg.

In order to build up this body of mine untold numbers of animal and vegetable lives have been destroyed, and when I am through with it, it must go back to its elementary parts, Carbon, Hydrogen, Nitrogen and Oxygen to pay the debt of nature, whenever the power of vitality ceases to hold it in combination, whether it goes by the slow and disgusting process of decomposition, or the more rapid and cleanly way of combustion.

"Let the dead bury the dead" may have seemed an unkind reply from our Saviour to the young man who asked permission to go and bury his father, and not in keeping with his former command to "Honor thy father and thy mother," but it teaches us the more important lesson that kindness to the living is better than kindness to the dead.

The Parsees and some of the early South Americans caring only for the bones, placed the bodies where carniverous birds would carry away the flesh. In South Africa the bodies of women are thrown into the jungles to be devoured by wild beasts. The Chinnooks bedeck their dead, place them in canoes, and let them float down the river in search of the happy hunting ground.

The early Indian tribes of North and South Carolinas, previous to burning their dead pasted them over with soft clay, which when burned formed a stone coffin. Others put them in hollow trees, and still others raised up rocks which were allowed to fall back upon the bodies.

The ancient Egyptians and a portion of the Romans believed that anything short of embalming the dead was inhuman.

In civilized countries five methods are more or less in vogue. Inhumation, Immuration, Incineration, Calcination and Circumcementation, and from a sanitary or humane standpoint we think earth burial the worst of all.

But a few feet of earth filter intervenes between an interred corpse and the water which is likely to find its way into our wells and springs, for like the veins that course just beneath our skins, so do water veins or little underground streams course but a few feet below the earth's surface, forming a complete plexus or net-work, and when the water strikes one of these little veins, the process of filtering ceases, and water conveyed in this way from a corpse which died of an infectious disease, would carry desolation wherever that water was used; and numerous epidemics have been traced to such causes. By the process of earth burials the surface of the earth is becoming saturated with morbific matter indigenous to the human family, which by being planted and nurtured has sprung up and bore fruit an hundred fold, and it is generally admitted that diseases transmitted from the cadaver are more fatal than if taken from the living subject.

Sir Henry Thompson gave it as his opinion "that no dead body was ever placed in the ground without contaminating the earth, air and water," and a practice so loathsome would not be tolerated for one moment, save for the fact that it is hidden from view.

A careful study of the subject leads

me to believe that not one entombed body in a hundred remains undisturbed. Want of room and love of gold has caused "God's acres to be planted over and over again in the thickly settled parts of the world, until confusion worse confounded makes up the mighty jargon.

Some cemetery associations after 5 years of continuous neglect on the part of friends to look after their burial plots smoothe them off and sell them over again ; nor is this practice without the sanction of law, for Lord Stowell many years ago gave an opinion which has since stood for good law, that "If the living forget or neglect to care for their dead, they cannot expect the government to allow such neglected spots to stand in the way of progress."

Laws have never been made strong enough to hold a tombstone in place when living men want the room. The truth is there are but a few outside of our own near kin, that will raise their hand or voice to uphold the sanctity of the tomb.

One hundred and one years ago there was a complete wiping out of the old graveyards of Paris, and the remains were shoveled indiscriminately into carts and carried away.

The London *Quarterly Review*, Vol. 42, page 380, says, "Many tons of human bones from the depopulated cemeteries of that metropolis are annually converted into fertilizers. Within fifty years ship loads of mummies have been brought from Egypt to Boston, ground up and converted into paper.

A considerable portion of Northwestern Philadelphia is built on the sites of former cemeteries, and everywhere even in this new country of ours, there is not a city or town of any considerable size that has not already had to brush back the dead to make way for the living.

The reports of the Philadelphia Board of Health show that for the last fifty years, they have been waging a continuous warfare against burials in the city limits.

When we attempt to decide what is the most respectful and sanitary disposition of the dead, we should decide not for a day, but for all time.

We should remember that what has occurred elsewhere will, under similar conditions, occur again, especially in this rapidly populating country of ours, where corporations and individuals are constantly stretching out their hands for more room and valuable space ; and that against such claims a dead man's title to his 2 by 6 is not worth a fig. Philadelphians understand this and are moving back their dead at the rate of about 2000 a year ; and the city authorities are moving many more of such as have no friends left who care for their mouldering clay.

The "Germ Theory" that all contagious diseases are produced by positive definite microbes, without which the contagion could not exist, and would disappear from the face of the earth, if the germs which produce them could be obliterated, we think is correct ground, and calls loudly on us for a microbite war of extermination.

For the accomplishment of so desirable an end two methods present themselves. The first is to destroy them in the living subject, as is done by vaccination against small-pox, and the second is to destroy them in the dead instead of planting them for reproduction and multiplication. The former may not be fully accomplished in this generation, but I trust the time is not far distant when medical men will vaccinate as effectually against cholera, consumption, diphtheria, scarlet, typhoid and yellow fevers, as they now do against small-pox, (and I hope hydrophobia).

As to destroying the infection in the dead, the method is here and only waits public sentiment to put it into use.

The microscope has brought to light these innumerable infinitesimal enemies of our race, that prey upon us as the wevil does the wheat, and no grander work awaits the sanitary scientist, than the obliteration of these pests of humanity.

As a beginning to this good work, I would stop the process of earth burials as now practiced, which subjects our bodies to putrefaction, rendering them abhorrent to every sense of humanity, and makes the departed loved ones send back the darts of anguish to the living.

Why contaminate the earth, air and water with germs of pestilence, when science points out a way that is pure, quick and cleanly.

Cremation:—What is it? And wherein does it differ from inhumation as commonly practiced? Both accomplish the decree of the Creator, who said: "Dust thou art and unto dust shalt thou return." One is by a slow lingering process that requires many years for completion, while by the other the same result is reached in about one hour.

By Cremation the liquid and gaseous portions of the body (98 per cent.) are purified and set free at once, while the remaining two per cent, which is also rendered innocuous, is neatly urned in a glass or earthen vessel, and kept compactly together as long as there is anybody to care for our sleeping dust.

Cremation is not a latter day invention, for when history sprang into being it was there; and none of the early historians spoke of it as being new or novel.

The first case recorded in sacred history, is found in first Samuel xxxi chapter and xii verse, which reads: "All the valiant men arose and went out all night, and took the body of Saul and the bodies of his sons from the wall of Beth-Shan, and came to Tabesh and burned them there; and they took the ashes and buried them under a tree at Tabesh, and fasted seven days.

History records that Hercules cremated the body of Argius, a fellow soldier slain in the Trojan war, 1184 B. C. and sent the ashes to the young man's father, to whom he had promised to return his son either dead or alive.

When first known the Scythians, Celts, Scandinavians and Germans practiced it to a considerable extent.

The better class of ancient Greece were cremated, and throughout Asia to the present time, it has been a common method of disposing of the dead.

Among the ancient notables who were cremated, we may mention the names of Alexander of Macedonia, Hannibal, Capt. Williams and Shelley the poet.

The first white man incinerated in America, was Henry Lawrence of Charleston, S. C., an intimate friend of George Washington; his body was, by his own request, burned in his garden in 1792.

Dr. LeMoyne, an intelligent physician of Washington, Pa., was the first to build a regular crematorium in this country, and he made it imperative on his heirs to have his body burned after death, a command which was complied with some 8 years since, and so favorably are the people of that section impressed with it, that the furnace has since been kept hot most of the time.

The incineration of America's greatest surgeon, Prof. Gross some four years ago, gave a new impetus to the practice in the United States.

> "Di marjorum umbris tenuem et sine pondere teram
> Sperantesque crocos et in urna perpetuum ver,
> Qui præceptorum sancti voluere parentis
> Esse loco!"

Various modes of Cremation have been practiced from the rude funeral pile down to the neatly constructed furnace of Siemes, which will incinerate a body in from 50 to 80 minutes, by a pure white heat of about 2000 degrees Fahrenheit. The furnace is constructed on the reverberatory plan, and the body does not come in contact with the fuel.

A society was formed in London in 1884, of Britain's most learned sons, with Sir Henry Thompson as president, for the purpose of disseminating knowledge upon the subject of disposing of the dead, with the following declaration of principles.

We disapprove of the present custom of burying the dead, and desire to substitute some mode which shall rapidly resolve a body into its component elements, by a process which cannot offend the living, and shall render the remains absolutely innocuous. Until some better method is discovered we desire to adopt that usually known as cremation.

In nearly all of the cities of our own land, societies have been organized composed mostly of scientific men, with the same object and aim in view, as that of the London society, and every year witnesses the erection of several new furnaces within our borders. Pennsylvania now has four, where five years ago there was but one.

Three years ago a crematorium was erected near New York, and when completed over 40 bodies were awaiting incineration. Philadelphia has a new one just completed after the most approved plan.

The reformation is taking root every where, and throughout Europe and Australia the leaven is working.

All who die of zymotic or contagious diseases which would be about 15 per cent. of the total number of deaths, should be incinerated by the command of law.

When properly performed there is no unpleasant smoke or smell arising from the operation, and nothing save the presence of death to offend the sensibilities of the most delicate.

In preparing the body for cremation it is draped in a neat cotton or linen shroud, free from all metallic substances, or wrapped in a sheet saturated in alum water. Some prefer that the corpse be encased in a sheet zinc coffin, which burns as readily as a shroud.

Several hours are required for the furnace to cool off so that the ashes can be removed; they are of a greyish white color, pure as the driven snow, and weigh about 3 pounds.

With the return of cremation will come the Columbarium for receiving the urned ashes of the dead. They will probably be built above ground as their contents will in nowise be detrimental to the living. These structures would be built of brick or stone, fire-proof, and arranged so as to suit families or single urns.

A properly constructed Columbarium 100 feet square would be equal in receiving capacity to a fifty acre cemetery, thus saving ninety-nine hundredths of the ground now given to the burial of the dead ; and this is no mean item when the cost of a burial lot in our cities is equal to the cost of a small farm in the country.

Another method suggested is to take blocks of granite one foot square, make excavations in each to hold the ashes of one body, cement them tightly together and build them into a monument or pyramid. In this way a shaft 100 feet square and one hundred feet high, would contain a million blocks, or in pyramidal form a little less than half the number.

With crematories established within reasonable distances of each other, mortuary expenses would be reduced to one half the present cost, thus checking the tendency of the day for extravagant funerals.

There are two things that those who are incinerated need not fear. First, they will never be buried alive, and second, the body snatcher will not disturb their rest, neither will their skeletons walk the grave-yard fences at midnight alone, to frighten nervous people with their rattling bones.

A young lady whose name and location I have forgotten, when upon her death-bed requested that her body be burned and her ashes scattered over her favorite flower garden ; believing it to be better taste to feed flowers than worms ; and said to her friends ; "When you look upon the flowers of my planting, think of me as in them, gather them and as you press them to your lips, we shall kiss again."

A lady of much bodily suffering said to me not long since, "Doctor, when I take up my residence in the Celestial city, I want an entire new body, or it will be no heaven to me ; for this rickety old frame would give out before I could reach the first landing on the golden stairway."

Then if our bodies must dissolve away, a decree from which there is no escape, why drag them through the tedious slums of putrefaction, a condition which if brought to light mankind would flee from with fleetest feet.

There are three objections to this method of disposing of the form divine. The first is the only one worthy of consideration, yet the second and third are put forward most frequently. The first is the opportunity which it affords of destroying evidence of crime in cases of death by poisoning, but it is unfair to defend earth burials with its manifold dangers to the living, for the sole purpose of occasionally exhuming a body to repair a lack of adequate observation at a more fitting time..

But with cremation will come more stringent rules for detecting crime ; and a body tainted with suspicion should be kept until the officers of the law are satisfied.

Again we should remember that every trace of all active poisons, save three ; Mercury, Arsenic and Antimony, are soon eliminated from the cadaver; and post mortem examinations in such cases, would prove abortive evidence.

The second objection, that it is disrespectful to the memory of the dead, was well answered by the young lady who said: "that she preferred being food for flowers rather than worms." And you who think it is horrible and inhuman, place the two methods side by side, follow them in their results, not for a day, but for weeks, months and years; and if, after a careful and deliberate consideration, you come to the conclusion that you prefer burial, then so be it.

The third objection, and one frequently urged, strange as it may seem is, "That burning the body in some way disturbs the relation of the soul to its Creator, and interferes with the repose of the spirit."

This would hardly seem worthy of an answer, but as ours is a battle against prejudice, we give it a passing notice.

Lord Shaftsbury though not a Yankee, we think, answered the question by asking another.

He inquired "What has become of all of the blessed martyrs burned at the stake, if the burning of their bodies interfered with their resurrection?"

To which we may add another question, to make his more distinctive and pointed. Does any one in this intelligent audience believe that Polycarp, Huss, Latimer or Ridley, who were burned at the stake, at Smyrna, Constance and Oxford, because of their faith in the Christian religion, are any less likely to occupy seats at the right hand of God, than had their bodies mouldered away in earthly graves.

The body is but a cage in which the bird of Paradise is imprisoned, and when the bird has escaped there is no more use for it than there is for the cast off shell of a hickory nut; for each new soul that wings its way into the world, brings its own cage with it.

Theologians hold to the doctrine "That the soul is completely emancipated from the body at death; and that the resurrection to each soul is when freed from its tenement of clay, it rises to the realms of glory; or in the language of Scripture: "Then shall the dust return to the earth as it was, and the spirit unto the God who gave it."

You will need no doctor after you cross the dark river; and I do not expect to frame my diploma nor hang out my sign when I reach the other shore; for then and there this corruptable body will put on incorruption, and this mortal will have put on immortality.

SANITARY INSPECTORS.*

BY ALFRED CARPENTER, M. D.,
OF LONDON, ENGLAND.

Gentlemen:—You have a higher motive than that of self-preservation. You desire to be worthy of the offices you fill, and to perform the duties pertaining to them with credit to yourselves, and advantage to the locality in which you are placed. Here is the motive, and it is one which must commend itself to all good citizens.

It is curious to note the ignorance of the nominally educated public upon the nature of your duties. It is but too often supposed that it is simply a question of water closets, of drain pipes, of cesspools and slums, with which the so-called better class of people have nothing to do. The cook and the kitchenmaid have to see that the dustmen do their work, and if that is done and the water closets of the house don't smell, the public think they have done their part in the matter, and they relegate the Sanitary Inspectors to obscurity, and unsatisfactory neglect.

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*An abstract from an address to the Association of Sanitary Inspectors, North-Western District at Liverpool, May 18th, 1888.

I want to show the outside public, if they will listen to me, that there is something much higher in sanitary work than the points I have mentioned. That unsavory subjects may be put aside, but if their condition is not supervised by intelligent men who understand what they are about, it is the public who suffer most, and that but too often in ignorance of the true reason for their suffering. Sanitary inspectors duties may be mainly in the slums ; they may be at work in the supervision of dustbins, of sewers, of cellar dwellings, of slaughter-houses and back yards, of food markets and refuse heaps in out of the way places, but if their work is only half done, if they only comply with the letter and do not enter into the spirit of their work, the effect of their perfunctory performance may make itself felt when least expected, and in ways which cannot be brought home directly to the delinquent and neglectful people.

It is not only by the removal of epidemic and infectious disease that a locality benefits by sanitary inspection. There may be a complete absence of the disease germ upon which typhoid or small-pox depends. There may be no scarlatina in the district, and the so-called zymotic death-rate may be low, and yet the health of the district may be most unsatisfactory. It is too much the custom to study what is called the zymotic death-rate, and to judge from that factor as to the general health of a given district, and it is often assumed that because that form of disease is not so fatal as in other places, therefore the sanitary condition of the district is satisfactory. This is a serious mistake. I want the public to become aware of this, and to recognize the fact that sanitary work can go much further in the prevention of disease and death than this. Why should men, women, and children die of disease at all? There is no provision for death in early life except by accident, ignorance of the laws of health, and neglect of duty towards our neighbor on the part of somebody. Accidents may be reduced to a minimum as is shown by the effect of responsibility in this direction upon railway companies, only 37 deaths have been caused on railways in the whole of the Kingdom during the past year, a tithe only of those which happen in the streets of Liverpool. Would they have been so limited if it had not been for the law of responsibility? No doubt accidents may be entirely prevented by proper regulation, and by throwing the legal responsibility of result upon those who cause them. The duty towards our neighbor is being learnt by local authorities by the agency of Sanitary Inspectors ; and legal responsibility again is coming to the assistance of public health by making owners responsible for consequences when they let a house in an infected or unsanitary condition to an unsuspecting tenant.

We want an extension of this legal responsibility which shall apply to Corporations as well as to single landlords, so that when a Corporation supplies an infected water to their customers, or neglects to enforce some of the laws of health, the rules for the enforcement of which are placed in their keeping, but which are not enforced, that they should be equally responsible for the results when it can be brought home to them, as failing in their duty upon the points in question. The ignorance upon the laws of health among the masses can only be counteracted by healthy education, and it is here that the assistance of the Sanitary Inspector is especially useful. If the house is dirty, if the ceilings of the homes of the people are blackened, if they leave their floors in a filthy state, and their back yards polluted with ordure, you can give a clinical lecture upon the evil results of such states, and assist the people to the knowledge that "Cleanliness is next to Godliness," and that a good supply of pure water is far more to their advantage than the near neighborhood of the public-house. You, of all men, know that the nearer a working man's home is to the gin shop, the dirtier is the dwelling, and the unwholesomeness of the atmosphere of the district will be measured by the number of drink shops which may occupy a given area.

You, with the ministers of religion, and the doctors have especially brought to your knowledge the evils of intemperance, and its close relationship to disease and death, and how the excess of drink shops raises the death-rate of a town.

I have said that sanitary practice is of much greater benefit than simply preventing epidemic diseases. I will explain my meaning. Let us take fifty cases of inflammation of the lungs, or of bronchitis, or of scarlatina, this latter the result of infection. Why do some die, and some recover? Why should disease be fatal at all? Fatality is connected to some extent with the surroundings in which the patient has lived before he became affected, and is living at the time at which the disease commences in a given district. If there has been a large number of fatal cases of inflammation of the lungs, you may be certain that the air of that district is not so pure as it ought to be, and the habits of the inhabitants are not so prudent as they might be. No man dies of inflammation of the lungs in middle life, or indeed of any acute disease be it what it may, if he has lived healthily both as to habits and character and surroundings. If a district has a death-rate of 24 in the 1,000, it is double what it ought to be. The half of the deaths which take place might have been prevented if the people would obey the laws of health, keep their houses and their persons clean, dispose of their excreta in a proper way, and be temperate in their habits of living, and at the same time do their duty to their neighbor by avoiding the sophistication of articles of diet, or indulging in the mischief of adulteration for the sake of the riches which follow upon its pursuit. The evidence which is forthcoming in support of these views is such as must carry conviction in the long run to the minds of the British people, and must lead them to punish adulteration, to put further impediments in the way of the liquor traffic, to insist upon property owners fulfilling their duties and accepting their responsibility as well as taking the interest upon their capital, and lastly in compelling local authorities to appoint officials to do their work who really know how to fulfil the duties they undertake to perform, and give them instructions to carry out that work without fear or favor.

The statistics of Dr. W. Farr, supported as they have been by the researches of the veteran sanitarian, Edwin Chadwick, show that the value of a human being's life to the State is upwards of £150. Edwin Chadwick is daily striving to bring the eye of public opinion to bear upon "the errors of local administration" and the mischief of neglect. But little attention, however, is paid to his warnings, for they grate somewhat upon the ears of political antagonists, and it is not always expedient to publicly recognize them. Like as the sanitary unit is the sanitary condition of the individual house, and the habits of the individual tend to account for his state of health; so the sanitary condition of the country generally must depend upon the sanitary state of the parish. There may be good men at head-quarters, but if the agents by whom they have to carry out their work in the parishes are inefficient, the result of the work done cannot be satisfactory. The healthiness of the extreme twigs upon which the sanitary tree depends for its development and growth must effect the growth and the development of the trunk of the tree, if, therefore, the Sanitary Inspectors are not healthy and right, the whole growth is unsound.

Decentralization is to some extent a good thing, but it would be a very bad thing in your case if it left you entirely at the mercy of the Local Authority who appoints you, and the members of which are but too often the greatest offenders against public health. I may illustrate what I more especially mean by a reference to the Smoke Nuisance Removal Act. That Act has to be put into force by the Local Authority of a district. If, as at Bolton, the principal offenders can command a majority upon the Council, is it likely that officials will cut their own throats by insisting upon obedience to the law. Hence, the Smoke Act is in abeyance. The Local Authority fails to do its duty, and declare themselves to be the better judges of what is right than Parliament itself. *Quis custodiet ipsos custodes* is as true now as in the days of the Latin poet, Juvenal. Whilst supporting, therefore, a fair amount of decentralization, and giving the parish a certain amount of Home Rule, I think it would be very unwise to cut the cord which should bind the whole fabric of local self-government in one beneficial whole, and the moving spirit of which should be the Sanitary Commander-in-Chief, who should sit at Whitehall.

I will conclude in the words of Chadwick, as given in his address on the 5th of this month, at the Westminster Town Hall:—

"It is our duty to endeavor to replace poverty by competency, nastiness by comfort, brutishness by education, shortness of life by length of days, and that health which brings, naturally, not only a long life for each member of the human family, but happiness in which to enjoy it. No men amongst men have a nobler task than this—than ours."

TRICHINIASIS AND ITS PREVENTION.*

BY G. W. FUREY, M. D.,
OF SUNBURY, PA.

In attempting to prepare a paper upon the subject I have been courteously invited to present to you upon the occasion of your meeting here together for the commendable purpose of increasing your knowledge of hygienic attainments, I can not help feeling deeply a sense of the difficulty and responsibility as well as the honor and distinction attending the undertaking. Aside from the inherent wonders of the disease to all, it appeals to those specially interested in the health of their fellow beings, in a peculiarly sensible manner.

I shall never forget a time when I was myself one of the most earnest and enthusiastic students who ever searched the authors for information and help to combat that terrible disease, known as trichinosis, or trichiniasis.

If the few remarks I shall offer to day will happily prevent some one present from ever suffering the same agony of doubt, perplexity, and responsibility I experienced then; if, more happily still, they shall contribute to the obviation of the untold and indescribable misery, torture, and horror attending an actual case of the dread affliction, I shall feel that I have performed a professional duty, which in turn, I trust will plead with you the cause of the many imperfections in which you will find them presented.

Copying the comprehensive synopsis given in Ziemssen's Cyclopædia, I shall then proceed to give you my personal experience with three groups of Trichiniasis, with which I have had to do, as a physician, within the last eight years.

1. Man becomes infected with Trichinæ by eating Trichinous pork.

2. The muscle Trichinæ in the stomachs of mice and rats, become freed from their capsules, and develop in the intestines of dogs and cats, as also in man, into the mature sexual worms, intestinal trichinæ, which

3. Attain their full growth at the end of about seven days and give birth to living young; these young migrate directly from the intestines into the muscles of the same person or animal.

4. During their migration they are found in the mesenteric glands, abdominal cavity and pericardium.

5. They penetrate into the interior of the muscle fibres, and destroy the contractile substance.

6. Within the muscles they grow to perfect muscle-trichinæ.

7. These migratory processes bring about in man a severe febrile disease, trichinosis, which,

8. May result in death, both in man and animals.

9. Cases of capsulated trichinæ are to be considered as healed cases of trichinosis.

Our history of the disease dates back to 1860, in which year the results of scientific investigation first apprised mankind of the startling intelligence that the innocent appearing, and supposed innocuous coils of dormant animation, which Paget discovered, and which in 1835, Owen definitely described and named trichinæ spiralis, were, in reality, the actual source, as well as the sequelæ of that terrible disease which had hitherto been known as English Sweat and the Black Death.

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*Read before the Sanitary Convention at Lewisburg.

A knowledge of this fact elucidated at once, in the minds of many physicians, the inexplicable course and termination of the peculiar epidemics of rheumatism, in their past practice. What a comfort it would have been to their honest hearts, if the discovery had been accompanied by a happy means of cure for the many inevitable cases that were to follow until the time that sanitary efforts shall have wrought its extirpation, by the only possible method of prevention.

In glancing at the natural history of the parasite, I will omit a description of its structural arrangement, sufficing with telling you that it is a round worm, only the thirtieth of an inch in length in the case of the female, and two-thirds of that length in the male worm. The preponderance of evidence goes to indicate that their original habitat is the body of the domestic hog; and that where rats and other animals have been found infected by them, the animals have been caught in the vicinity of butcher shops, or where they could have had access to discarded pork. It is also quite probable that isolated communities of trichinous rats do not exist, as such, for any considerable time. If rats were the means of propagating and communicating the disease to hogs, their well known roving propensities would render the infection much more general than it is. However, outside of China and France, I believe humanity can, for all sanitary purposes, safely consider the real source of the disease to be the pork we find so essential to our wants.

We will now follow some muscle-trichinæ, from their encysted state in a ham, or other piece of pork, on their wonderful mission of mischief. The insufficiently cooked, or raw meat is eaten by a man. By the act of digestion the cell walls or capsules containing the worms are dissolved, and they are liberated within the alimentary canal of the person who has eaten them. This liberation seems to permit them to undergo further development, and to become real intestinal trichinæ; for, in about a week the natural processes pertaining to gestation have taken place, and the female trichinæ has given birth to hundreds of living young. These young are very independent and ambitious creatures, for, as soon as they become really constituted and endowed individualities, they penetrate the walls of the intestines, and, via, the lymphatics, blood-vessels, and probably the contiguous tissues, soon arrive at their destination—the fibres of the voluntary muscles, everywhere throughout the body. There is a marked preference for the flexor muscles of the upper part of the body; but they wield the most pernicious influence in the diaphragm, inter-costal muscles, and the muscles of the throat, rendering breathing difficult and particularly painful. Having attained their destination, be it accidental or selective, as to locality, their personal activities seem to cease as soon as they have folded their tired forms, individually as a rule, into the shape very nearly simulating that other commodity of Bismarckian culinary succulency, and of which they may be a sort of poetic prototype—the common pretzel; for the adjacent tissues, probably as a precaution against further aggression on the part of the unwelcome neighbors, immediately set about encompassing them with a chiton of soft cushion-cells, which are suspiciously hurried to the form of a prison-cyst, and then leisurely plastered up with lime. In this capsulated condition they remain in a dormant state during the life of the person or animal in whose body they are, and for a long time afterwards, only requiring to be set free in the stomach of some other animal to begin again the same routine we have been considering.

The first group of cases that came under my care, consisted of five persons—four adults, and one five year old child. On Thursday morning, Dec. 9th, 1880, a young man, aet. 26, called on me for treatment for a severe cold he supposed himself to be suffering with. His symptoms were first manifested on the previous Sunday, as a languid, distressed feeling, but he had resumed work on Monday, Tuesday and Wednesday. His case presented some peculiar features—swelling of the face and hands, and a strange muscular lameness—which he had first noticed on Monday, but, ascribing these to the cold, damp weather to which his occupation had exposed him, I prescribed for his "cold," and he returned to his home. The next day he sent for me to visit himself and a brother who boarded at the same place, and who had begun to develop the same description of a cold. When I arrived at the house it was soon apparent that everybody but the baby, residing there, had to a more or less degree, the same kind of a cold. Of course, it immediately occurred to me that there was some serious and uncommon disorder present, but what its nature was, I had not the remotest idea. A careful search of the whole premises, for some probable specific source, was barren of results, until, in a back shanty, I came upon the family meat barrel, and was attracted by the un-pork-like appearance of some pieces of pork I examined. Trichiniasis? Was the awful suggestion that forced itself upon my startled mind.

Serious as the realization of it would be, I felt a sense of relief in the fact that a demonstration would give me something tangible to treat my patients for, which I had about given up all hope of ever being possessed of. Unobserved, I cut several small pieces from the pork. Then in a casual, guarded manner, I elicited the information that the hog, of which the family had only been eating a few days, had been purchased of a butcher, dressed, that it had frame enough for 450 lbs., but that it only weighed 317 lbs. Arranging as well as I could for the comfort of my patients, all peacefully ignorant of what I suspected, I came to Lewisburg, to obtain the assistance of my friend, Dr. G. G. Groff. We were not long, with the use of his powerful microscopes, in discovering the specimens I had brought, to be profusely infected with trichinæ. Unable to obtain any encouraging method from the books in regard to treatment, I determined to rely on a course of my own, which I will mention further on. The young man who had first complained, and who, while mixing the sausage-meat, had in tasting it, swallowed a portion raw, was very much the worst of the five cases.

He had a dull indescribable pain or lameness of the muscles of the back, arms, and limbs. The pain upon taking a full breath was very acute, retarding his respiration to such an extent as to occasion the troublesome bronchorrhœa with which he was afflicted. He preferred to lie quietly on his back ; but there was no disposition to flex the extremities. The fever began on Wednesday, the 8th, and continued till Sunday.

The swelling of the body and extremities, as also the face, and which I do not think was a true œdema, had attained its maximum by the 12th, wholly closing both eyes. It was entirely gone in less than a week. On the twelfth, I noticed that the sputa from the lungs and throat was considerably tinged with blood. The discharges from the nostrils were also considerably colored. This peculiarity also affected in the same manner his brother. During the time it remained, which was for about six days, he complained of a dryness and a prickling sensation in the throat. Profuse diarrhœa began on the 15th and lasted till the 21st. Exhausting and profuse perspiration lasted from the 17th to the 24th. It was much worse at night. In the morning there was a marked intermission of the fever, with corresponding amelioration of other symptoms. There was no appetite ; but there was intolerable thirst; at no time was there any sign of coma, but after a week, there was an inordinate desire to sleep. The pain on moving or being touched was referred to the parts beneath the skin. The case of one patient suggested to me the belief that the disease, in intensity, depends upon the amount of the parasites ingested, he being under dietetic restrictions for indigestion, had eaten sparingly of the infected pork. Another reason that three of the cases were so mild, according to this idea, is that the family had been eating of a quarter of beef, and had indulged in only a few dinners of the boiling pieces of pork. That they had eaten of the large pieces will account for the non-destruction of the trichinæ lying deep down within the meat. The brother, mentioned before, who was also very sick, had also tasted of the raw sausage meat. I have copied some comments, as they appear in my report of these cases to the *Med. and Surg. Reporter*. When we consider that a man may have trichiniasis and not be confined to bed ; not sweat profusely ; not cough extensively ; nor even suffer from nausea and diarrhœa, the inefficacy of book descriptions, in one's first experience at least, is very apparent. I mean that all the works I have read on the subject have considered only extreme cases, while here in one group, three of whom were of the same family, habits, and natural condition, I found only one classical case, while the other four were so ill-marked and moderate that I should not have suspected any one of them, alone, of having trichinosis.

For further assurance that we ought to be on our guard, and alert for such contingencies, it is only necessary to say, that while I was attending my five patients, I read in the papers of seven cases in one family, and four in another, in Franklin, Erie Co., Pa., who were treated for typhoid fever until six of the first seven died, before it was ascertained that the disease was trichinosis ; and also of a butcher in New York, who underwent an illness with the same disease at the same time with the most approved treatment for rheumatism."

It is with the hope that I may persuade you that this is not one of the phenomenal afflictions that always happen over in "the next county," that I briefly mention the next group of cases which it has been my fortune to attend. It is with the purpose to impress upon you the fact that within a period of five years, ten miles from this place, there have been eight cases of trichiniasis. For the purpose of brevity, I shall again copy from the same report. "In the Fall of 1885, a German, named, or co-incidently named Flesch, a brewer, having supplied his larder, with plenty of "city-cured" hams, proceeded, as a matter of course, to slice one of them off, and to use of it raw in his family. In a few days his family physician was called in to attend his little 8 year old daughter. In the course of treatment consultation was had, and the remedies for rheumatism continued. After suffering terribly for a week, she died. A few days previous to the little girl's death, the father and a little 5 year old son began to manifest symptoms similar to those the girl complained of at first. I was not called in until after the funeral of the girl. After getting as good a description of her symptoms as possible, together with all the attending circumstances, I pronounced the trouble, with my patients at least to be trichinosis. This diagnosis I verified by discovering intestinal trichinæ in the excreta, the ham having all been disposed of.

A thought, for which I will assume the responsibility, and ask for no endorsement, has just occurred to me; perhaps in these cases I have fortuitously discovered a commendable utility for beer! The father who was foreman in a brewery, having unlimited access to the beverage, and it was said, capacity and appetite, as well, although having eaten freely of the ham, was not confined to bed, nor did he give me much trouble. With the little boy, however, it was far different. He rapidly developed all the classical phenomena of the disease. I had no hope, for several days, of his recovery, but he ultimately did get well, and as hearty as before his attack. The mother in this family was dyspeptic, and eating no ham, had escaped the disease.

I was called, two years and a half ago, down to Bethlehem, to see the two surviving patients of that sad group of trichinosis.

The mother and her thirteen year old daughter had recently died of the disease. I found the father though not confined to bed, suffering very much indeed. He was a dyspeptic, and had that fact to thank for his life. This made the third time, too, in my experience when I could fervently bless a patient's indigestion. I have never been able to say this in any other instance. The little girl, five years of age, was lying very low, with few hopes of a recovery. Her case presents no peculiarities, however. They were both placed upon the treatment I will mention soon, and both recovered their usual health, the child with her rosy cheeks, and her father with his friendly dyspepsia. They visited me a year after, and showed no signs of the disease. The circumstances attending the sickness and death of the bright, handsome, intelligent girl who died, are the most pathetic I have ever heard of in practice! A joyous, happy, hungry little girl home from school on butchering day, could'nt wait till supper-time, made for herself two sausage cakes, put on the frying pan and cooked them, hurriedly I presume. She then ate them with the exquisite relish known alone to healthy growing childhood. Within a few hours she was taken sick with the most torturing and loathesome of diseases, and, in a few days died a terrible death by the side of her dying mother. I was informed that the mother and daughter were treated during the greater part of their sickness for rheumatism. I feel that I ought to say here that to one who has seen both diseases, there is very little in common between them, and small chance of a mistake. To Mr. Eugene A. Reau, the accomplished microscopist, of Bethlehem, is due the credit of first suspecting, and demonstrating the true nature of the disease with which the family was afflicted.

It is with considerable hesitancy I approach the matter of treatment I have before alluded to; but I have postponed it as long as any appropriate place of appearance for it in this paper remains. I do not presume that, in the few cases it has stood my need, it has met with sufficient test to commend it, unchallenged, to my profession; and yet I cannot believe that it was not an actual factor in the recovery of the nine patients who were restored to health while subjected to it. Associated with these nine cases were three other patients, with equal chances, who were not treated, who did not recover.

The first evident indication, when the patient is seen early, is to clear the alimentary canal of all trichinæ, both intestinal and their young. For this purpose active purgation was adopted. Santonine is the most reliable and thorough vermifuge we have. With the hope of destroying the worms remaining in the intestines, I administered freely of that drug. You may attribute it to a sort of venomous hope to embitter the vibritile journey of the muscle-ward worms, that I gave liberally of our staunch old sheet-anchor: quinine. But I confess to only this: it was given with the thought of leucocythæmia in my mind. Sulpho-carbolate of sodium had proved, with me, a satisfactory prophylactic in a recent epidemic of scarlatina.

At the risk of being empirical, I gave large doses of it, properly diluted. There are always plenty of indications to sustain the strength, and of course this was attended to.

This constitutes the plan of treatment I have followed in three separate groups of trichinosis, all the patients, nine in number, making good recoveries.

Upon careful reflection, and a review of the best suggestions written, I am forced to admit that the prevention of trichinosis is not easy of accomplishment. It is of great importance that some universal method of procedure be adopted, and acted upon by the people. There is no use of entertaining the thought of reaching the ultimate object by exterminating the more proximate, the hog, for the fact is settled that the hog, as pork, is indispensable to the culinary wants of the best part of mankind. The absolute futility of exterminating the rat creation, even though they were the source, is assured by ages of persistent effort and failure on the part of man. That the domestic hog is so proverbially filthy, is because of his enforced relations with filthy, or ignorant owners, rather than from any other cause. If its pen be kept in a cleanly condition, or it be allowed the freedom of the fields, and the possibilities of its real nature, its food will be of the vegetable kingdom, and its flesh the most wholesome, nutritious, and palatable in the whole menu of meats. It is not a carniverous animal. It has no appetite or demand for promiscuous garbage, and the abominable slops of the poisonous kitchen swill barrel. You can only succeed in the ultimate prevention of trichiniasis, when common sense and decency are exercised in behalf of the sanitary condition of the hogs we use as food; if we never furnish them with infection they will not become infected. Supply them with sufficient of the food nature adapted them for, and they gladly relegate to your cats the rat-catching department, and to your chickens unhampered liberty to revel in carrion.

One good authority says: "It is imperative that the remaining hogs should not be given the waste material on butchering day." Zenker's rule is the most comprehensive on this subject: "When slaughtering hogs, nothing, not even of the cuttings, and none of the kitchen garbage at the time, or for some time afterwards, should be thrown into the hog's feeding trough. Therefore on butchering day, even dish-water should be kept away from them." Under all circumstances, pigstyes should be so constructed, that rats cannot get into them. A united systematic effort on the part of the whole people, is the only means of prevention. Measures must be taken to insure the use of only such pork as is known to be positively free of trichinæ. This, I think, can best be accomplished by the enactment of such laws as shall enforce the microscopic examination of all pork, in whatever form. This implies the examination of every dead hog, from any cause, for it is very essential that any flesh infected with trichinæ, be promptly destroyed. That remaining in the barrel I first told you of, beautifully lighted up the canopy above Purdytown Hill the same evening the discovery was made. Burn it! burn it! that is the only safe way! Then no other animal will become infected, and consequently human beings will escape. The microscope is the only means that will tell us of the presence or absence of the parasite, and great care and considerable familiarity with its use, and skill in the preparation of objects are required on the part of the examiner. As the responsibility devolving upon him is often great, and the issue involved no less than human life, the microscopist must be eminently reliable, as well as capable. Heat is the one certain destroyer of trichinæ. Some investigators assure us that a temperature of 155° F. is sufficient to kill them. Water boils at 212° F.

I would insist that my pork be subjected to that amount of heat through and through. Another thought is here apparent, the meat ought to be of such size or thinness that it will be readily permeated by steam, as flesh is an exceedingly poor conductor of heat, and must be heated by the process of convexion. This is why it should be steamed rather than broiled. Pickling or smoking will have no destroying effect. The only safety depends upon the meat being thoroughly cooked. Instead of burdening this paper with statistics, I will simply assert that trichinous hogs are more common than is usually supposed. Only a few years ago a prosperous and contented farmer, living on this side of the river, in Snyder Co., I believe, prompted, probably by glowing and tender anticipations of the approaching Christmas time, in the effulgency of his magnanimity, gave a sickly pig to a poor tenant. The humble and grateful man, imbued with an altered and better opinion of "the rich," removed his bristly present to his lonely sty, where he industriously proceeded to "fatten it for the space of about a week." Not observing an adequate ratio of obesity accumulating, the porker was then butchered. In a few days the whole family was writhing in the torments of trichiniasis. One or two members of the family died; but I have no definite record of the case. If my memory is correct, since 1880, there have been at least seven groups of trichinosis in this state. In one set of examinations, made in Sweden some years ago, the proportion of hogs infected was found to be 26 per cent. This is considerably higher than any other examination has given, so far as I can learn.

A great sensation was made a few years ago about Bismarck's discrimination against American pork. It was a commendable act of the wise old man. In it he displayed his good sense, his intelligence and his patriotism. The word which is law in this country comes from the people. When their fiat goes out against the ignorant and careless, or the criminal use of "American pork" the disease will be stamped out.

The tobacco you and I indulge in, and the malt and spirituous liquors the balance of Americans partake of all bear the assurance of legalized permission in the form of a code of vouchers.

You cannot purchase a pound of tobacco, a keg of beer, or a bottle of whiskey in Pennsylvania that has not been thus stamped.

This is the outcome of the united voice of the people, who were first convinced of the necessity. Convince the people of to day of the great need of more stringent laws for the insurance of pure and wholesome foods; point out to their careless and lack-a-day observation the vital and personal interests they sustain in the matter, and the day is already here when "Chicago killed" and "city cured" pork, which most of us are obliged to use, will come to our markets bearing the conclusive affirmation of the searching microscope.

Whatever is accomplished in the measure must originate in the east among those who constitute the market. Just so long as we consent to eat, unquestioned, the hams shipped us from Chicago, just that same length of time will the shippers be as unconcerned about the sanitary status of their shipments.

The State Legislature, in 1881, was invited to consider the well-fare of the public in a certain important matter involving the registration of medical diplomas, and immediately the requisite law was in earnest force that tore the contemptible scales of arrogance, and charlatanism and imposition from the blanched and craven faces of a host of dangerous pretenders, placed open evidence of the real standing of some of them upon the accessible tablets of our county records, and sent the unhallowed hands of others back to their pristine sphere of usefulness—the honest grubbing hoe.

Acknowledging my own unfitness to compass the question by any very practical suggestions, I, however have incidentally thought of a method by which a modest beginning could be attempted with the prospective idea of ridding Pennsylvania of trichinosis. It is something like this: First. We will have the passage of the necessary law with its attending penalty for non-observance, to compel the microscopic examination of all pork butchered in the State, by whom-so-ever, for whatever purpose. Second. Indisputable microscopic evidence of the freedom of every piece of pork from infection that is brought into the State from any other locality. Third. The appointment of a sufficient corps of efficient examiners throughout the State to render the operation of the law practicable; these examiners to be furnished with some recognized form of attesting their approval of the sanitary condition of each examination.

I can not conceive of a more appropriate contrivance than a clinch ring, such as our friends the grangers delight to rely upon in their successful attempts to undo the rooting proclivities of the animal in question during the days of its natural life-time. These clinch-rings, I will call them, bearing some proper impress as a designating mark, could be quickly fastened to the rind of the pork as soon as examined. Every single piece of "foreign" pork should be thus stamped, and every native porker should be known to have had one of them affixed before being offered as food.

It may require a few more such appalling visitations as the Plymouth horror, or the sad, sad epidemic which devastated this beautiful town in 1882, in the manner alone possible to diphtheria, to sufficiently emphasize the bounden necessity of a more general interest in our State Board of Health; but it is my belief that, as in other States where the measure has long been in vogue, that of our more conservative old commonwealth will be crowned with eminent success, that in the near future its Board of Health will take its place among the many other liberal institutions, the pride as well as protection of her people.

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Factory and Tenement Influence.—According to the annual report of the Inspector General of Recruiting, of England, it would appear that there is no escape from the conclusion that the influence of factory and tenement is progressively dwarfing a large mass of the population. It appears that in the last year 74,991 men offered themselves for examination; 15,280 were rejected on account of bad health, 17,573 were healthy but undersized, in about 16,000 of these the defects are more precisely mentioned, 10,000 being rejected for undersized chests, 2,000 were under weight, and 4,000 under height..

◆

Deaths at over Seventy in Baltimore, says Dr. Hamilton, have increased in ten years from 0.064 per cent. to ten per cent. of the total mortality, and in Washington from 0.10 per cent. to 13 per cent.

NEGLECT OF HYGIENE.*

BY C. B. KINYON M. D.
OF ROCK ISLAND, ILL.

There is one branch of medical education which is very much neglected by the profession and colleges.

I refer especially to "sanitary science," but as I desire to speak of the work of "state boards of health," I have thought best to put what I have to say under the head of "state medicine." In view of the fact that there is no unison between authorities of different countries, or even between authorities of the same country, as to what is meant by "state medicine," it will be best for me to make plain what I intend to cover by the term. It is my purpose to speak of it as including both "preventive medicine" and "medical jurisprudence."

The complicated conditions of this nineteenth century civilization demand a larger knowledge of hygiene, to hold in check some of the ever increasing tendencies of greed, and the suicidal tendencies of ambition, to elevate and give greater significance to the responsibilities of citizenship, and to establish more securely the idea of international brotherhood.

Each year the medical profession is being weighed in the balance by public opinion, as to our attitude on sanitary matters, and it will be a veritable day of wrath when we are found wanting.

You are all familiar with the causes and details of the terrible scourge of typhoid fever at Plymouth, Pa.

Prompt and intelligent action on the part of the medical attendant of the first case would have averted all that calamity.

True, the people would never have known how much he had done for them, would not have given him proper credit, perhaps not even recognized his good work; but when a man comes to settle with himself and his Maker, where would he prefer to be, with the one who indifferently or ignorantly allowed the seeds of that scourge to be sown under his very eyes, or with the one who, unseen and single-handed, throttled the monster at its birth and saved the people?

Let the state boards of health demonstrate the laws of life and of health, of disease and its prevention. Let the legislator crystallize such knowledge into laws for the protection of the people and give the boards the power to execute those laws, after they have been correctly interpreted by the proper authority. If the legislature fails to pass such laws, when their necessity has been made plain, let the responsibility rest with them.

With this understanding, the profession ought to stand by the boards. If it does not, it will be left behind.

In order to bring clearly before your minds the future possibilities of this work, I have thought best to make a comparison between the work done by the sanitary commission, during our civil war, and the work to be done by the sanitarian of the present day. As we proceed with this comparison, you will note the obstacles met by them, and the methods whereby they were overcome. I shall also try to make plain some of the obstacles met to-day, and point out how they may best be overcome.

In mediation between the rigor of

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*Abstract of a recent address

military administration and the comforts of household life and affection for the 2,700,000 men sent to the fields, more than half of them under twenty-four years of age, the sanitary commission found its opportunity.

A few whole-souled men, men able to lift their minds above all prejudice, were not slow to seize the opportunity, but from the very outset, the medical bureau of the army doggedly opposed any and all plans proposed by these men.

Feeling the justice of their cause, and having the courage of their convictions, they appealed to President Lincoln and the Secretary of War.

At the same time they appealed to the public for sympathy and aid. In those days of excitement it did not take the public long to tell what it thought, and soon a strong feeling was manifested in favor of the commission. President Lincoln saw the drift, and knowing full well that the Government, in its hour of trial, could ill afford to alienate the good will of any of its citizens, urged upon the medical bureau the need of the sanitary commission.

At last he persuaded them to endure the existence of the commission, provided it had no official position, or authority to make any recommendations whatever to the War Department. It was also not to receive any financial aid from the Government.

In the beginning and throughout its existence the commission had this motto: "The Government is the soldier's richest, ablest and most constant friend." In this way no one was antagonized.

After they had created a public sentiment approving their work, the commission secured, by an act of Congress, early in '62, the right and privilege of pursuing, unmolested by the medical bureau, their heaven-born mission of mercy.

This secured, they began at once to develop a system of work designed to meet the exigencies of war. So untiring and successful were their efforts that they were ably represented at 600 of the 700 battles of the war.

At the close of the first eighteen months of their work, we find their expenses for hospital transport alone were over $12,000 a month, and up to this time they had received but $158,501.

Just at this crisis they received, from California alone, a draft for $100,000, followed two weeks later by a like amount. This was sufficient to arouse the whole country, so that in the two and a half remaining years of the war, they received and judiciously expended over $25,000,000.

Of course, in those days this nation lived as much in two and one-half years as it lives in fifty years of peace, therefore the "sanitary commission" did a marvelous work, unprecedented in extent, but the demand for prevention is as imperative to-day as then, and it must and will by some one be met.

Let us draw some lessons from the above brief and imperfect history.

Now, as then, there exists a need. There still is opposition to be met and overcome, and as then, the public must be educated.

Now, as then, there is need of laws. Now, as then, existing laws and authority must not be antagonized, but instead, correct laws enacted and properly interpreted and executed.

In speaking of laws I want to be distinctly understood as meaning sanitary laws.

ARE MODERN PLUMBING CONVENIENCES INIMICAL TO HEALTH?

By JOHN WORTHINGTON,
OF PHILADELPHIA.

Perfect Drainage, good ventilation and thorough flushing of the system has much to do in the make up of a healthy home. Without it, indeed, a dwelling is nothing less than a breeding place for disease of every kind. Although sickness will come, and death will follow even in the most carefully protected home, it is our duty to look well into and guard against every defect that would cause disease in our houses and spread it among our neighbors. With this fact in view, and fact it is, the question is, how shall we protect ourselves? For a few years past this subject, so far as drainage and ventilation and flushing goes, has engaged the attention of only a limited number out of the thousands who should be deeply interested. Within the past few months bad work has been discovered where thousands of dollars had been expended for first class work. This has caused the question to arise: how shall we remedy this evil? I would suggest, first, a perfect system; second, first class material; third, good workmanship; fourth, perfect flushing; fifth, simplicity in the work, using as few pipes as possible and having all the pipes in actual use; sixth, avoid all dark corners and rooms for such fixtures, and keep them as far as possible from sleeping rooms. This combination of requirements cannot be separated, and neglect of one risks the perfection of the whole. Last of all, though not the least by any means, have the entire work tested, that we may be certain of its perfectness. Some say that this is not necessary, but facts lately developed show that it is necessary, and no plumber who desires to do good work will object to having his work tested. Without it, I claim, you are not sure as to its proper completion, and as the hidden work is where all the mischief occurs, every job should be tested, and the owner should positively know that in his dwelling, and for at least 10 feet beyond, everything is tight beyond doubt. To have this kind of work done requires consideration, and it should not go on until the plan is perfected, as we who have given the subject careful study find that a system adapted for one location will not suit another, and our neglect of this knowledge very often causes all the trouble.

As to the plan of a system, kind of material, etc., I will say nothing at present, but, if it is your pleasure I will give you my ideas and experience on the subject in a future letter, and will only add that I am as satisfied as I am of my existence, that plumbing and drainage carefully done are perfectly safe, and that the luxury of the bath, water closet, &c., can be enjoyed by everyone, without risk to the household, by having the work properly done.

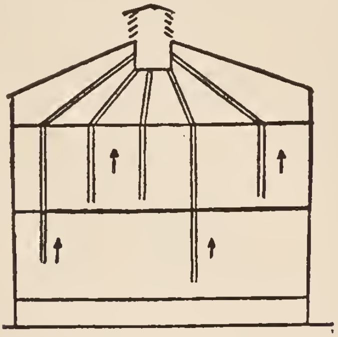
THERE ARE only 150 Indians left at Saganing, Arenac county, Mich., out of over 500 four years ago, disease having removed a large number. This remnant belongs to the once famous Chippewa tribe, which came from Canada some forty years ago, crossing Lake Huron.

SCHOOL HYGIENE.

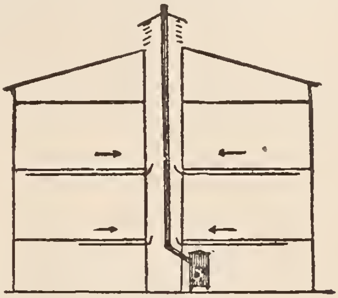
BY D. F. LINCOLN, M. D., OF BOSTON, MASS.

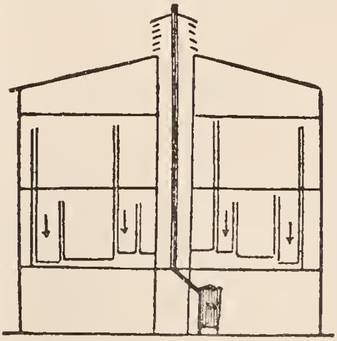
(Continued from page 220.)

Three illustrations (Figs. 6, 7, and 8) show how the first plan may be carried out. It is to be observed that they all imply the expenditure of extra heat to force a draught; also that in No. 6 the heat is applied in a chamber in the attic (which may be of wood lined with sheet metal), while in the others it is imparted by the smoke-flue of the furnace. The most economical plan of the three is stated by Planat to be the last; the least economical, the first. The Bridgeport school plan is illustrated in the next plan (Fig. 9). It is ventilated by two large, brick shafts, which curve and meet in one at the attic story. In their upward course they pass directly by each school-room, and take foul air by one large opening from each. These same shafts also carry the tin flues for the hot air supply of the rooms, one such flue for each room. The heat lost from the tins goes to keep up the heat of the shaft, and increase the suction power. The smoke-flue is utilized in the same way, and there is a "suction coil" for extra heat in the upper part of the flue.



With but one inlet and one outlet, there was need for special care in planning the position of the registers. The plan adopted seems to be quite successful in distributing the air and equalizing the temperature. The inlet for hot fresh air is near the ceiling: the current travels towards the windows: a descending current near the windows, originating in the cooling effect of the glass, continues the movement, and finally there is a strong outward movement of air at the inner corner of the room on the level of the floor. Something like a circular movement is thus produced. In the diagram (Fig. 10) arrows are introduced at points where currents are felt, and the intervening points may be filled in by the reader's judgment. The figure represents the room in section, with temperature taken simultaneously after the apparatus had been in operation forty-five minutes. Similar arrangements have been since

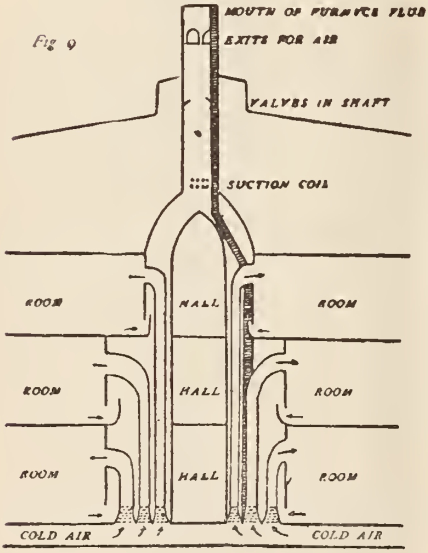




made, to the knowledge of the writer, in schools in Auburn, New York, and Newton, Mass., with good success.

The orifice for the exit of foul air ought to be a good deal larger than that for the inlet of fresh air. In examining Fig. 9, the reader is desired to make the correction mentally.

Fig 9



BRIDGEPORT, CONN., HIGH SCHOOL.

Vertical Section.

The use of steam power as a ventilating agent is not a novelty in other public buildings, but in school-houses it has been tried, so far as known to the writer, only in Boston, and that within a few weeks past. The experiment is one which it is very desirable to make, by way of testing its economical value. The arrangement consists of a fan placed in the space below the ridge-pole, within a box, propelling the air upwards through the cupola, and exhausting by good-sized flues from below. The motor is a high-pressure engine in the cellar, which seems to require from twelve to fifteen tons of coal during the winter and the constant presence of an engineer.

A new form of engine ("vacuum engine") is proposed, requiring no separate fire, and run by jets of steam from the boiler which heats the school at an extremely low pressure. No tests for carbonic acid have been made, but the anemometer test, applied in two schools, gave a rate of discharge equivalent to twenty-four cubic feet per head and minute, which is about as much as we can ask for. The expense of introducing the appliances is stated as moderate; flues, not to be considered, being required in any case; vacuum engine (no boiler required), about $500; and fan, something more, besides cost of gearing to transfer power from cellar to attic. In one school a certain amount of rumbling noise is heard (but not complained of), due to vibrating motion in the attic, the apparatus having been introduced not as part of the original plan, but after the school was built. In the other building scarcely any sound was heard.

The arrangement of flues for such a plan has nothing peculiar. It requires chiefly the avoidance of angles, or rough and narrow flues, and is represented in figure 6, the fan being placed at ****, just below where the cupola is set upon the roof.

No system for exhausting air by hot flues or by steam power should be introduced without providing for the introduction of a corresponding amount of fresh-warmed air. Hence it follows that ventilation and heating constitute parts of one general problem, and that the same mind should plan both.

"Indirect" heating is the only kind worthy of our consideration. In cases where stoves are set in school-rooms, they should be made indirect heaters by the use of screens, as is hereafter described. For larger buildings, steam heat, by means of coils arranged in boxes in the basement, is probably the best. Auxiliary coils may be placed in entries, but not, as a rule, in school-rooms. Ventilation cannot be had without some increase in the bills for fuel. There is reason ,however, to think that the amount of increase is not so great as might appear. In our worst ventilated schools there is a good deal of warmed air let out at windows, in an unsystematic way.

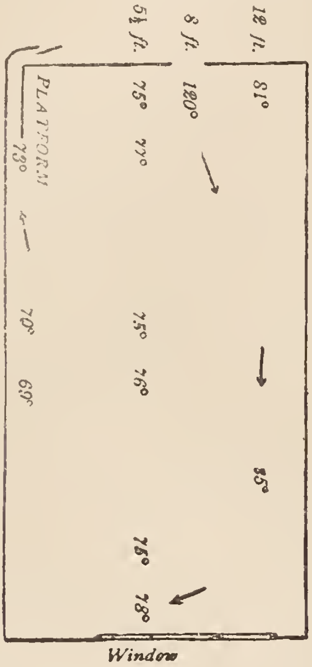


Fig. 10.

BRIDGEPORT HIGH SCHOOL.

Vertical Section of a Room, showing Temperatures at a height of 1 inch, 5 1-2 feet, 8 feet, 12 feet from floor.

Good ventilation implies that cold draughts from open windows are done away with ; hence a lower degree of heat in the room is sufficient for comfort. It also implies a rapid change of air, with equalization of temperature, so that the feet are kept warm ; this also enables us to be comfortable at a low temperature. A third point, bearing in the same direction, is the greater activity of the circulation and of the change of bodily tissue, and the consequent increase of bodily warmth in fresh air.

The writer has at least twice found opinions strongly expressed in favor of the results of ventilation. Once in a new primary school at Springfield, Mass., where the teachers agreed that they could get along with the thermometer some degrees lower in their new, well ventilated quarters, than formerly was the case in close rooms. The other instance points indirectly in the same way. In the new building of the Massachusetts Institute of Technology, with nearly perfect ventilation, the quality of the work performed is said to be decidedly superior to that which was done in the old building, which has no system worth naming. The ventilation in the new Institute building is very successful. It is effected by a fan in the basement, which forces air through openings in the inner walls of the rooms at a high point, the air escaping by flues in outer walls at low levels. The allowance per hour and head is 1,500 cubic feet in lecture-rooms, and from 2,000 to 4,500 in laboratories of various kinds.

The analyses of air gave from 4.87 to 5.23 parts carbonic acid in 10,000, in a room which was half full of students. The estimate for a full room would be from 7 to 8 parts per 10,000. Corresponding analyses in the old building gave from 9 to 12.34 in a room with doors and windows open, half full; if filled it would probably stand at 21 or 22 in 10,000. Prof. Woodbridge's estimate of the fuel burned last winter is 307 tons for the old and 404 for the new building, and some allowance is to be made for the fact that all the boilers are situated in the cellar of the older building. Both are of nearly the same size, and are equally used, and for the same purposes.

RESPONSE TO THE ADDRESS OF WELCOME.*

BY J. H. McCLELLAND, M. D.

MEMBER STATE BOARD OF HEALTH OF PENNA.

Mr. Chairman, Ladies and Gentlemen:—I have been designated to speak the thanks of the State Board of Health for the very cordial welcome extended to us in the words of the distinguished President of Bucknell University, the Rev. Dr. Hill.

We are under many obligations for this tender of hospitality upon the part of the people of Lewisburg, who evidently know how to make people welcome. But if I mistake not, hospitality is not of recent birth to this people or place, it is indeed, rather "native and to the manner born," and was characteristic of the original owners of this lovely valley. For is it not here, over these beautiful hills and valleys, comprising a landscape of almost unparalleled beauty, lived that "worthy son of a worthy sire" Logan, of whom it was said, that no white man ever went from his cabin door hungry. Hospitality is therefore not only characteristic of this people, but indeed historic as well. We might, however, be sure that efforts such as this would find hearty approval in a community where religion and education have joined hands, from the time of old Ludwig Deor, who laying out the town, first set aside ground for the church; and so from the early time that Templeton and Paget first taught school, to the present, the church and the school-house have been prominent features of the landscape.

It is hardly necessary for me to enlarge upon the objects of this Board or this convention, suffice it to say the unmixed purpose is to conserve the health and save the lives of the people of this Commonwealth.

The Secretary of the Commonwealth, Ex-Lieutenant Governor Stone, who represents upon this occasion the Chief Executive, has most powerfully and intelligently set forth the work to be accomplished by this Board for the people of the State. We must save thousands of lives (not to speak of sickness), which have a money value estimated at $15,000,000, and yet the Legislative department of this government has placed at the disposal of this Board to accomplish this great work, the ridiculous pittance of $5,000 a year! Think of it, less than is appropriated to look after the cattle of the State. Why, some of the Southern States, give forty to fifty thousand dollars a year to their State Boards, and if $100.000 were appropriated, it would be none too much, for the great work to be done, and that could be done! It means life and health to the people of this great Commonwealth!

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*Delivered at the Sanitary Convention at Lewisburg.

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EDITORIAL.

ARE MODERN PLUMBING CONVENIENCES DANGEROUS?

In pursuance of the question of "House Drainage," which we have been discussing, we are led to ask the above question. In relation thereto, we publish, on another page of this issue, the opinion of a practical and intelligent plumber, in whose views on this subject we heartily concur. We should be very sorry to see the modern water-closet and the wash-basin banished from our houses, and we can see no valid reason why objection should be made to them, if, (and this is a big If) the plumbing work be properly done in the first place, and its condition be looked into and maintained in proper condition subsequently.

With plumbing conveniences, as with many other good things, it is not their use but their *abuse* that renders them agents injurious to health. It is a mistake, and a pity, for the general public to suppose, as they do, that Sanitarians condemn what to most people seem like the comforts of life, as the natural consequence of which Sanitarians are called "cranks," and hygiene is looked upon as a something, the observance of which is calculated to rob life of its pleasures. Such an idea is extremely erroneous, and the sooner we disabuse the public mind of it, the sooner will we remove a great obstacle to the universal acceptance of the doctrines of hygiene. To our way of thinking it is not necessary for a reasonable person to deny himself or herself any one single *true* pleasure or comfort in life in order that he may lead a hygienic life. Of course, the immoderate drinker, the glutton, the man who dissipates or who runs to excesses of any kind, must put on the brake and curb his unhealthy propensities, but, does this self-control imply the denial of any true pleasure, does it necessitate any deprivation that a sensible man will not recognize as a wise provision, even though no thought of hygiene enters into the calculation.

Let it be clearly understood, and the sooner the better, that a hygienic life does not require the abandonment of one single rational pleasure or comfort of life. As for the care that is necessary in order that we may have healthy surroundings; it is no more than good housekeeping calls for.

In reference to the point under special consideration, we want, first, good plumbing work, to procure which we must, of necessity, employ a good plumber, and we should ourselves learn how his work should be done, that we may have an intelligent supervision thereof; and to procure this knowledge is not difficult; indeed one will be surprised how readily he can master the principles of Sanitary plumbing if he but gives a *little* time to it.

Having secured good work, it is only necessary that we see to it that it is kept in condition, which requires but little time and attention and if we have these two conditions, of good work and this work in good condition, then can we enjoy with perfect safety all the comforts that modern plumbing appliances vouchsafe to us.

We are extremely anxious to remove from the public mind the monstrous error that hygiene means a deprivation of pleasure, and we shall have much more to say on this subject.

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MUST PIGS BE DIRTY?

One of the most universally popular errors of the nineteenth century is that pigs are by nature dirty animals, so that "As dirty as a pig," has come to be a familiar saying. Pigs and their pens are dirty, not because it is natural for them to be so; but, because man, for some inexplicable reason has reached the conclusion that such is their natural condition. We are anxious to emphasize what Dr. Furey says on this subject in another part of this issue and to impress upon our readers the falsity of this disease-breeding notion. Dirty pigs and dirty pens will make diseased pork, and this, in turn, will make diseased men, women and children. Pork, of itself, is harmless as an article of diet, but filthy pork will certainly produce disease just as will filthy beef or filthy chickens. We must impress it upon our farmers that there is no natural necessity for dirty pigs and dirty pens, and that we want these animals and their surroundings kept clean.

NOTES AND COMMENTS.

CHOLERA IN JAPAN IN 1886.

From the *Weekly Abstract of Sanitary Reports*, we learn that the United States minister, in his dispatch dated May 9, 1888, transmitted copies of a printed pamphlet entitled "A Brief Review of the Operations of the Home Department in Connection with the Cholera Epidemic of the 19th year of the Meiji (1886)." The following is an extract from the introduction to the pamphlet:

The cholera epidemic of the nineteenth year of Meiji (1886) was the most violent and malignant since that of the twelth year of Meiji (1879), there being 155,574 cases, among which 110,086 were fatal. Indeed, there were only 17 days in the whole year when there were no cases.

The epidemic spread over the whole country, an area of 3 fu 41 ken, and even Hokkaido suffered from its invasion; but it was most violent in Osaka, Ishikawa, Toyama, Tokyo, Fukui, and Niigata. The kens of Kagoshima and Miyazaki and the northern part of Hokkaido, were the only localities which escaped its ravages.

As to the cause of its outbreak and propagation, accurate evidence is wanting; it is an undeniable fact, however, that it sprang and was propagated from the widely spread germs of the disease which had lain dormant in Osaka the preceding year, there being no trace of a fresh introduction. Osaka, in the autumn of the preceding year, had been invaded by the disease from Nagasaki ; but after some thirty days of prevalence the epidemic gradually declined with the approach of the colder season, though it did not then entirely disappear. One or two cases kept occurring continually over into the next year, until on the second of January there were five cases reported in the western and southern districts of the city and in the ku of Sakai. On the third, five more cases were reported in the three ku of the West, South and North and the ku of Sakai. From this time forward, the number of cases gradually increased, until the approach of the warmer season, toward the end of April, when it had spread all over the city, where it raged up to the end of October. During the epidemic, there were ninety-nine days in which the daily number of cases reported was over one hundred, and four days when there were two hundred. Indeed, it was the most severe epidemic ever known in Osaka.

The situation of Osaka is such that it undoubtedly favors the propagation of an epidemic ; for the water of the Yodo River being conducted through the city by canals in various directions, besides furnishing a convenient roadway for transportation and water traffic, also receives the refuse of the city, while at the same time it supplies the city with drinking-water.

The wells, keeping the same level with the canals, freely communicate with each other, and thus the drinking water of the city is more or less mingled with the water of the drains. Such, then, being the situation of Osaka, when an epidemic appears the same convenience for the transportation of goods furnishes an easy medium for the propagation of disease. It is not strange, then, that since the tenth year of the Meiji (1877) whenever an epidemic prevails the city has been a center of the epidemic. Moreover, in the preceding year there was much rain after the spring until finally, in June, the Yodo River overflowed its banks, inundating the streets and houses. Hence the city was rendered very filthy, in consequence of which the concealed germs found a favorable nidus from which the disease appeared with the return of the warm weather, and finally ravaged the whole city. It is also to be borne in mind that, as Osaka is the commercial center of Japan and has free communication in every direction, it is likely to become the cradle of epidemics, and therefore, whatever has made its appearance in various other localities has had its origin directly or indirectly in Osaka.

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PASTEUR'S RABBIT DESTROYER.—The *South Australian Register*, to hand by the latest mail, contains an account of some experiments at Sydney with M. Pasteur's microbes of chicken cholera. A number of rabbits were inoculated with the microbe on a Saturday morning and placed under close supervision in isolated boxes ; but on Monday the rabbits had not shown the slightest traces of the disease, which according to M. Pasteur, should prove fatal in about 24 hours. The experiments were not regarded as final.

How to Manage the Infected Sick.—In a recent lecture, by Dr. F. Vacher (says the *Prophylactic*), we find the following instructive remarks on the subject of the above head :

How to prevent the air being tainted by the seeds of disease, especially infectious disease, and how to remove such seeds from the air? are in some respects simpler questions than—How to ventilate? At least they are more circumscribed. It is not now believed, as it once was, that epidemics travel very long distances by means of air. When plague or cholera spreads from one country to another it is conveyed by infected persons or bales of goods, not by currents of infected air. The seeds of disease, as they occur in the air are generally attached to portions of skin, mucous or diseased tissue, and do not travel far or maintain their vitality long in the air. The problem, therefore, for all practical purposes resolves itself into how to manage the infected sick so as to prevent the spread of infection? Instruction in this respect, to be of much service, would require to be drawn up with reference to each specific disease. The following general directions will, however, indicate the main points to be observed.

1. In preparing the room for the reception of an infectious patient it should be cleared of all furniture but that absolutely required, and the floor should be cleansed and left bare.

2. The room or rooms used by the patient should be regarded as infected, and cut off from the rest of the house by means of a sheet or sheets (wrung out with a disinfectant solution and kept moist therewith), suspended outside each door, and reaching to the floor.

3. Everything brought into the room—as dishes, glasses, books, toys—should be regarded as infected, and nothing that cannot be readily rinsed or soaked in a disinfectant solution should be removed from the room.

4. Towels, pocket-handkerchiefs, soiled linen, &c., should be boiled in a disinfectant solution. One made from sulphate of zinc and common salt is efficient and does not stain.

5. The patient should be washed daily with a simple disinfectant and soap and water. In scarlatina, after washing, the skin may be anointed with oil.

6. There should be a good open fire in the infected room summer and winter, and, if no special ventilation be provided, the window should always be left a little open.

7. Dogs and cats and domestic pets should be rigidly excluded from the sick room, as they may readily carry the infection to the external air.

8. If the patient die, the body should be at once swathed in cloths wrung out in a disinfectant solution, and should be sealed in a metal coffin before being removed from the room.

9. When the room is no longer required by the patient, the doors and windows should be carefully pasted up, and the room and its contents disinfected with the fumes of burning sulphur for twenty-four hours. The room and contents should then be left to air for a week, the windows being open and a fire in the grate. The room and contents should then be thoroughly washed. Books and toys which cannot be washed, &c., should be burnt.

Disease in the Homes of the Rich.—*The Brooklyn Medical Journal* says "The deaths that occur in the families of the rich gain a publicity not incident to deaths in the families of the poor. The newspapers record prominently the former, and omit mention of the latter. Public attention is arrested, and, more than this, the public sense is disturbed out of proportion to the true bearings of the facts. There is a tacit assumption that wealth provides sanitary safeguards which poverty, through its ignorance or incapacity, does not provide. The inference is that when contagious disease proves fatal in the homes of wealth, such disease must be both especially malignant and widely prevalent. The records of the Board of Health do not justify either belief, and these records must be accurate in the matter of deaths.

Wealth does not imply intelligence in the proper conduct of living and in the details of bodily and household sanitation. Wealth may contract with an expensive and ornamental plumber and pay his bills; but, when the plumber has packed up his bag of tools, the well appointed house may contravene all dues to good health in under, or over, clothing, irregular and improper feeding, too great, too little or too varying warmth, irregular sleep, the nervous tension of hysterical affection and the heredity of unsound parentage. These conditions of unhealthy living are to be put alongside of the unhealthy surroundings of poverty and of a packed population. Of course, it is a pity that people who can afford to pay for things, cannot have what they want; but these people are the more culpable and the less to be sympathized with of the two. They can employ doctors, but the medical man is really more pitiful for the mischances of poverty than for the flabby helplessness of the rich. The actual intelligence of the community resides between these two extremes. The moral as well as the physical strength of the people is in this middle class, and here is the sanitary common-sense likewise. The newspapers are dependent on sensational statement, and they care for little save that each issue shall have fresh news. The prominence given to certain cases of death in bold head lines and detailed statement, has a disturbing influence on the public mind, out of proportion to the true statement of the average mortality. The opportunities of the average medical man give him information which he will hold it a duty to disseminate for the public quiet."

* * *

Primitive Man and His Diet.—Dr. Richardson, in *Longman's Magazine*, says, "Primitive man, wherever he was first cast, whether in one centre or in more than one, must, of necessity, have found his food in the plant world. We cannot imagine him commencing his career learned in the arts of hunting, killing, and cooking the lower animals for food. Many infer from this circumstance that the argument in favor of the vegetarian practice is copied direct from nature, signed and delivered by her. Not quite so fast. There is one interposing barrier to the free acceptance of vegetarian deed and act of conveyance of food from nature to man. Nature herself, of her own right royal will, makes for animals—herbiverous and carniverous—one distinctive animal food: a secretion from the living animal organism, a fluid which is a standard food—meat and drink in one—the fluid known under the name of milk. Against absolute vegetarianism then, we may fairly set up one exception derived from nature as the unerring guide. On observing the habits of animals, we discover another natural fact. We find that animals of quite different natures, in respect to primitive selection of food, possess the power of changing their modes of feeding, and of passing over, as it were, from one class to another. This change is distinct but limited, and we must accept it with all its extension on the one side, and with all its limitation on the other. The fruit-eating ape can be taught under privation to subsist on animal diet; a dog can, I believe, be taught to subsist on vegetable diet. But it would be as impossible to teach a sheep to eat flesh as it would be to make a lion feed on grass."

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Brass-Workers' Diseases.—In the *British Medical Journal*, Simon gives the results of his observations concerning the peculiar affections to which brass-workers are subject. These men rarely attain old age, and provident societies dislike to receive them as members.

When, in melting the metals together, the zinc is added to the molten copper, a dense cloud of zinc oxide rises. The effect of this upon the mixers varies greatly with the degree to which ventilation is secured. These men are subject to what is called brass-ague. Simon found that the subject becomes languid, depressed and very cold. He is pale, almost in collapse, his face covered by cold perspiration, he shivers, his teeth chatter and he is restless and anxious. He has headache, is nauseated and complains of muscular pains. He goes home, drinks freely of milk and goes to bed. These symptoms continue until vomiting occurs, when sleep or recovery follows, with debility on waking.

It is only when fresh to the work that brass-workers suffer from "ague," but they become inured to the effects of the poison, as do arsenic eaters. The tartar is constantly green, and no matter how thoroughly the teeth may be cleaned, the green coloration remains. This is due to the copper. White hair is colored green, and the underclothing assumes the same tint, from the perspiration.

Brass-workers suffer greatly from bronchitis, in common with all workers in dust. They die from this, or from consumption.

Dyspepsia, nausea, vomiting, metallic taste, thirst, colic, constipation and diarrhœa are very common. These men are often hypochondriacal, complaining of headache and muscular pains. The only distinctive point about these disorders is their obstinacy to ordinary treatment, and ready yielding to iodide of potassium.

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Decrease in Rural Mortality.—A Presbyterian clergyman who has served in the ministry for nearly fifty years furnishes some interesting statistics and observations relating to the increasing longevity in the rural districts of Central New York. He has attended five hundred and seventy-three funerals altogether since 1840.

The average length of life of the first hundred dead whose funerals were attended was twenty-six and one-half years, and thirteen over seventy years; of the third hundred, the average was thirty-seven, and twenty were over seventy years old; of the fourth hundred the average was thirty-seven, and twenty-eight were over seventy; of the fifth hundred the average was thirty-seven and one-half, and thirty-two were over seventy; and of the remaining seventy-three the average was fifty-eight, and thirty-two were over seventy, the oldest of the seventy-three being the late Levi Hanford, of Walton, who died at ninety-six. These remarkable figures, it should be noted, apply to an interior farming population, from which large numbers of the young folks "go West" or to the big towns, and where the quiet and wholesome environment of rural existence promotes longevity to an unusual degree. The venerable clergyman's records also show that of infants now born fewer die in childhood in proportion to births than died in years gone by. Not as many children are now born in proportion to the population as were born twenty-five to fifty years ago. There are more deaths proportionately caused by drunkenness and by lung complaints in these days than in former years, and these fatalities serve to keep down the comparative scale of longevity below what it would otherwise reach. The increasing length of years attained by the rural population is attributed to the exemption of the present generation from the severe toils and hardships encountered by their progenitors in clearing up the wilderness, and to the better understanding and observance of the laws of health.

LENGTH OF LIFE.—A writer in the *Gentlemen's Magazine*, says: "All professions are healthy as compared with trades. In some professions, notably the bar, to which might be added the stage, the early training is said, in a half serious banter, to kill off the workers. To some extent this is true of all professions. Men without self-control die, as a rule, young, whatever their occupations. In other cases, however, the conditions under which the classes named exist are the most favorable. The two things that most readily kill men who attain middle age are anxiety or loss of interest. The man who goes to bed not knowing whether a turn in the market may elevate him to wealth or steep him in ruin dies of softening of the brain; he who has made his fortune and retired, feels, unless he has cultivated a hobby, that he has no place in the world, and dies of inanition.

As a rule, the professional man of 50 has learned what he can do. If he is unfit for the line he took up he has slipped out of it; if he is making a fortune it is a career full of interest and with little trouble or anxiety to himself. It is not his own case that the barrister pleads, the physician combats and the parson arraigns. If, again, he is but moderately successful, his earnings, though small, are pretty safe. He gets as near an approximation to security as fate in a world such as this accords, and he may hope, barring exceptional circumstances, that the future will be as the past. His occupation, meanwhile, brings him consideration and intelligent surroundings, and his life is fairly and pleasantly varied.

CHOLERA.—At the annual *conversazione* of the Medical Society of London held recently the annual oration was delivered by Sir Joseph Fayrer, who took for his subject the natural history of cholera. He maintained that under certain circumstances English cholera was indistinguishable from its Asiatic congener, and quoted various authorities to show that Asiatic, British, and Damietta cholera differed only in severity and not in kind. He did not believe that the theories of contagion and diffusion by human intercourse explained the movements of cholera epidemics, since neither the frequency, direction, nor rapidity of the spread of the disease bore any relation to the development of means of communication. In many instances the disease had already occurred before the means of contagion had arrived, and in Bengal the course of the disease was upward, that is not with, but against, the course of the rivers. He believed that hygienic measures afforded the greatest security against cholera, but that cordons and quarantine had utterly failed to prevent its spread. He did not agree with the opinion that it was due to a specific poison.

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VALUE OF REST.—There is no better preventive of nervous exhaustion than regular, unhurried muscular exercise (says an exchange). If we could moderate our hurry, lessen our worry, and increase our open-air exercise, a large proportion of nervous diseases would be abolished. For those who cannot get a sufficient holiday, the best substitute is an occasional day in bed. Many whose nerves are constantly strained in their daily vocation, have discovered this for themselves. A Spanish merchant in Barcelona told his medical man that he always went to bed for two or three days, whenever he could be spared from his business, and he laughed at those who spent their holidays on toilsome mountains.

One of the hardest-working women in England, who has for many years conducted a large wholesale business, retains excellent nerves at an advanced age, owing, it is believed, to the habit of taking one day a week in bed. If we cannot avoid frequent agitation, we ought, if possible, to give the nervous system time to recover itself between the shocks. Even an hour's seclusion after lunch will deprive a hurried anxious day of much of its injury. The nerves can often be overcome by stratagem when they refuse to be controlled by strength of will.

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CLEANSING THE HANDS.—Dr. Vogel, of Eisleben, says that he has noticed that the coppersmiths, tinsmiths, etc., whose hands become covered with dirt from working in oxides and acids which cannot be removed by ordinary means, first rub their hands with warm oil and then, when this has thoroughly penetrated, with powdered borax. Subsequently washing with soap and water makes the hands perfectly clean. He advises those who have to use carbolic acid to go through the process above described first, and claims that in this way (1) disinfection is more thorough; (2) the hands are made purer than it is possible to make them by soap alone; (3) the hands remain soft and free from rough epidermic scales, and the odor of carbolic acid is destroyed.

COLLEGE ATHLETICS.—Mr. R. H. Dana, of Harvard, in a letter to the overseers, presents some interesting statistics in regard to college athletics, showing the growth of these exercises in Harvard since 1877. He says:

"In the old Harvard gymnasium the daily winter attendance, excepting for a week or two just before the opening of the river, when the candidates for the class crews came to exercise, was in my observation (1870–1877) somewhere about 20 to 54. I have been in regular daily attendance for months at a time for two hours at the end of the day with not four or five men exercising besides the University crew. There were less than 80 lockers, and they were not always used. In 1880 there were 474 lockers in the new gymnasium, and now there are 1049, all in use, with a demand for at least 50 more. Dr. Sargent tells me that there are 400 students actually in training, more or less, for various athletic teams, and perhaps nothing shows the general average improvement more than the fact that last year there were 250 men stronger than the strongest man in 1880. It is safe to say that any alumnus of over 8 years' standing, by going to Holmes and Jarvis fields of a pleasant afternoon, will see an amount of general exercise many times greater and more diversified than in his college days."

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SCARLET FEVER FROM THE COW.—A writer in *The Sanitary Journal*, Glasgow, Scotland, gives an interesting report of investigations on this subject. A house-to-house visitation was made within a given area in the city of Glasgow, with the following result: 1473 families were visited and 93 cases of scarlet fever and sore throat were found. The milk supply of every family was ascertained, and 172 families supplied by Dairy A yielded 95 cases of scarlet fever, while 1301 families supplied by other dairies yielded only one case. In tracing the origin of the infectivity of the milk it was found that the cows at Dairy B and C—the sources of milk supply for the healthy families—were perfectly healthy. On visiting Dairy A a number of cows were found thin and "mangy looking," casting hair generally, and near the root of the tail and over the hind quarters, casting skin freely, every tuft of hair having attached, when pulled off, a flake of cuticle. The teats had several sores covered with bloody scabs. A calf fed on the milk from these animals was almost at once seized with a highly febrile illness, which nearly killed it, but from which it recovered with loss of hair and copious desquamation.

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THE HUMAN HEART.—A curious calculation has been made by Dr. Richardson, giving the work of the heart in mileage. Presuming that the blood was thrown out of the heart at each pulsation in the proportion of 69 strokes per minute, and at the assumed force of 9 feet, the mileage of the blood through the body might be taken at 207 yards per minute, 7 miles per hour, 168 miles per day, 61,320 miles per year, or 5,150,880 miles in a lifetime of eighty-four years. The number of beats of the heart in the same long life would reach the grand total of 2,869,776,000.—*Medical World.*

ASIATIC CHOLERA.—At the very time (says Dr. John H. Rauch, the Secretary of the Illinois State Board of Health) when there is in the public mind a more profound and wide-spread dread of the probabilities of an invasion of this country by Asiatic Cholera than at any previous time since the beginning of the European epidemic, sanitarians and health officers generally seem—if not to have lost interest in the subject—at least to have apparently ignored it. It may be either that the admonitions and warnings have only now aroused the public, or that sanitarians have grown tired of the Cassandra role; but in either case it remains, that this country cannot be regarded as safe from the menace of cholera so long as—on the one hand, and under existing conditions of maritime quarantine—we continue to receive large numbers of immigrants with their household effects from the recently cholera-infected districts of Europe; and, on the other, so long as the disease continues its ravages on the South American continent.

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ANECDOTE OF DARWIN'S FATHER.—The father of the great naturalist was a physician, of whom the following story is related in his life, written by his son: "When a very young man he was called to consult with the family physician in the case of a gentleman of much distinction in Shropshire. The old doctor told the wife that the illness was of such a nature that it must end fatally. Dr. Darwin took a different view, and maintained that the gentleman would recover. He died nevertheless. An autopsy proved the young doctor quite wrong in all respects, and he acknowledged his error. Naturally, he never expected to be consulted again by this family; but a few months later the widow sent for him, having dismissed the old family doctor. Greatly surprised, he asked a friend of the widow to find out how he had come to be consulted. The widow answered the friend that she would never again see the odious old doctor who said from the first that her husband would die, while Dr. Darwin always maintained that he would recover."

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THE NEW LOUISIANA STATE BOARD OF HEALTH.—From the *New Orleans Med. and Surg. Journal* we learn that the terms of most of the members of the Board having expired, it became necessary to reorganize that body. Dr. Holt, the retiring president, absolutely refused reappointment, though strong pressure was brought to bear to persuade him to retain his position. Messrs. Shakespeare and Barr, Council members of the old board, were reappointed by the governor. The Council elected Messrs. H. D. Coleman and Wm. Graner, and Dr. W. H. Watkins, this latter gentleman being the former chief sanitary inspector. The Board, therefore, consists of the members just named and Drs. C. P. Wilkinson, C. E. Kells, L. H. Von Gohren and Mr. Kohn. Dr. Wilkinson was elected president and Dr. L. F. Salomon, secretary. Dr. H. W. Blanc was elected chief sanitary inspector.

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THE MEDICAL TIMES ON OUR "BOARD."—The *Philadelphia Medical Times*, with a rare and commendable degree of enterprise, published a daily edition during the recent meeting of the Pennsylvania State Medical Society in this city. In one of its issues, in the course of some remarks addressed to the Society, we read as follows: "We congratulate the Society that, by persistent effort, one of the measures discussed at recent meetings has been pushed to a successful conclusion. Pennsylvania has a State Board of Health, which was organized by authority of the Legislature, July 2d, 1885. With the labors of this Board all are familiar. We will merely say that in quantity and quality of its work it is second to none, and its published reports are not unworthy of this Commonwealth or of the Society. The high standard already attained is largely due to the quiet, but indefatigable Secretary of the Board, Dr. Benjamin Lee, to whom we are glad to make this light acknowledgment in token of his estimable services."

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College Exercise.—In another part of this issue, we publish the statement that, as the result of experience, the authorities of Harvard College have concluded that physical culture has proven advantageous to the students. We were somewhat surprised at this fact, because we were under the impression that physical culture was being carried to such an extreme in our colleges, that its results could only be disastrous. However, from another source, we learn that out of more than 1,000 undergraduates, 635 exercise by *walking*, 610 in the gymnasium, 598 in *playing tennis*, 301 in base-ball, 179 in rowing, 136 in football, and so on with smaller numbers through the list. The time spent in this way ranges from less than half an hour with a small number to more than three hours with a still smaller, the *average* being about *an hour and a half*. Here then, we find that while the larger number indulge in such unquestionably good exercise as walking and lawn-tennis, comparatively few resort to the violent and injurious game of base-ball, while still less go to football, which, as now played, merits nothing but the strongest condemnation.

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How they abort Small-pox in Connecticut.—A swede, who came to this country some weeks ago and who has been living on the road between Norwalk and Stamford, had the small-pox in a mild form and was moved to a barn on the premises. The premises were quarantined by order of the Board of Health, and a man who has had the disease, was appointed a special constable to see that no one approached the patient. The streets leading to the place were boarded up and red flags placed in conspicuous places. The prisoner was able to walk about, and was frequently seen behind the bars of his prison. Citizens of Norwalk, who have not been vaccinated within five years were advised to do so at once, and physicians have been instructed, where people are too poor to bear the expense, to do it at the expense of the town.

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The Drainage of Buenos Ayres.—With an area of upwards of 12,000 acres, and over 50,000 houses, the city is absolutely without either drainage or sewerage. In the year 1874 a grand scheme of complete drainage for both streets and houses was inaugurated; nearly fifteen millions of dollars have already been expended in its construction, and the street sewers are now almost ready for use; but the principal outlet or siphon which is to receive the accumulations of the drains and carry them to the river Platte, about 12 miles below the city, has not yet been commenced, and of course not a single house has yet been connected with the street drains. Under these circumstances, the wonder is not that the health of Buenos Ayres is not satisfactory, but that the death rate is not greater than it is.

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DIET IN SKIN DISEASE.—Dr. William T. Corlett thus concluded a paper before the Ohio State Medical Society. He reported a number of cases and described the treatment, and deduced the following principles:

Those having an irritable skin should avoid the use of, in youth, rhubarb, the small seed fruits, apples, shell-fish, sugar, and acids sparingly, malt liquors and spirits; in old age, lean meat, eggs, beans, shell-fish, pastries, malt liquors and spirts. Wholesome foods may become unwholesome by improper cooking, as hot cakes, heavy puddings, etc.; by defective mastication, either by eating too rapidly, or from loss of teeth. Man is an omnivorous feeder and cannot thrive on bread alone, neither can he maintain a healthy skin on exclusive diet of meat.

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OUR BOARD HONORED.—Our worthy and esteemed Secretary, Dr. Benjamin Lee, was elected first vice-president of the Pennsylvania State Medical Society at its recent meeting in this city. We are not quite clear as to whether the donor of the honor or the recipient is to be the most congratulated, though we incline to the former view, since we feel that the Society made one mistake, when they failed to seat Dr. Lee in the presidential chair, and we say this without any disparagement of the worthy gentleman, who was selected to fill that position. However, the Society meets again next year, and, as we believe that its members hold to the doctrine of civil service reform, we confidently look forward to the pleasure of congratulating President Lee.

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SANITARY MANAGEMENT OF SHIPPING.—Dr. Collinridge, Medical Officer of Health for the Port of London, in his report for the latter half of 1887, shows that considerable progress is being made in the sanitary management of shipping. During the six months over ten thousand vessels were inspected, nearly 88 per cent. of which were sailing under the British flag. In thirteen cases the ships were fumigated, five on account of small-pox, two for measles, two for enteric fever, one for scarlatina, one for yellow fever, one for chicken-pox, and one in consequence of the condemnation of its cargo of over 5000 quarters of beef. Altogether some sixty-four cases of infectious illness were reported, in the majority of which proper disinfection had already been applied by the authorities of the particular ships.

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THE ADMINISTRATION OF IODINE.—One of the most valuable drugs we have, and one, without which we would be at a great disadvantage, is undoubtedly iodine. As a rule we order iodide of potassium when we desire to use iodine, but, as every physician knows, there are many drawbacks, particularly to the *prolonged* use of this drug. An unobjectionable method for the administration of iodine has been really a long felt want. Mr. Hostelley, whose advertisement appears in this journal, claims to have supplied this want. We are inclined to think that his claim is a valid one, but since actual experience is the best test, we would advise our readers to send for a sample bottle, which Mr. Hostelley offers to furnish free (except express charges), and try it.

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THE FEAR OF DEATH.—In the course of his "Address on Hygiene" before the Pennsylvania State Medical Society, Dr. Traill Green, of Easton, after speaking of the necessity of ventilation, bathing, and cleanliness, alluded to the fear of suffering in the hour of death, and considered it to be unfounded. Even in croup, death is, as a rule, unaccompanied by suffering. Reference was also made to the fear of premature burial, which is quite general. A careful study of reported cases, however, showed that there is no well-authenticated case in which this has happened. In regard to the dread of being eaten by worms after burial, experience shows that there is no foundation for it.

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BEEFSTEAK BETTER THAN QUININE.—The *Boston Journal of Health* tells us that the old saying that "beefsteak is better medicine than quinine" is receiving able support from many white men on the Congo. Stanley regarded Boma as a particularly unhealthful place; but it has lost a part of its bad reputation since cattle were introduced and European vegetables began to thrive in the gardens. The thirty white men at this settlement have not been called upon to attend the funeral of a European for a year. Their herd has multiplied until they are able to have fresh meat on their table every day, which they think is a great improvement on the tinned meats and canned vegetables upon which Stanley and his followers relied for strength to lay the foundations of the Congo enterprise.

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NATIONAL QUARANTINE—At the recent meeting of "The Section on State Medicine" of the American Medical Association the following resolution was passed:

Resolved, That this Association urges upon the House of Representatives of the Congress of the United States the necessity and importance of the immediate passage of Senate bill number 2493, *to perfect the quarantine service of the United States*, which bill has passed the Senate and is now pending in the House of Representatives, in order to make provision for protection against the introduction of contagious disease.

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THE PROPHYLAXIS OF DIPHTHERIA.—From the *Medical News* we learn that Johannsen, of Libau, has used with excellent results a clear, red solution of potassium permanganate as a gargle. Beleiving that bacteria taken into the throat during the day are very likely to multiply during the night the gargle is used before retiring. He is convinced that the procedure is rational and efficient.

WET CLOTHING.—It is very injurious to sit with wet or damp clothing. Children who arrive at school in this condition should stand about the stove or heaters until dry, or in some cases be sent home. The children should not run out on wet days during recess, getting feet and clothing wet. Indoor games should be devised for such days. The wearing of rubber overshoes and coats should be encouraged. Children might be encouraged to have an extra pair of shoes and stockings at school, that the wet ones may be removed. It is an unhealthy practice to wear rubber boots or shoes all day, and the practice should be discouraged by teachers.

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DR. W. P. CLARK, our active business manager, becoming thoroughly imbued with the beneficence of the doctrines of hygiene has wisely concluded that a life of selfish bachelorhood was not in keeping with the role of a Sanitarian. We are glad, therefore, to be able to chronicle that on the 12th day of June, Dr. Clark was joined in wedlock to Miss Kate S. Bell, of Dauphin, in this State. We congratulate both parties and cordially welcome the charming Mrs. C. to the fold of Sanitarians; may they happily celebrate their *golden wedding* and thus practically demonstrate the value of hygiene.

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THE BIBLE AND DISEASE.—Quite a little bustle has been made by the newspapers because a certain physician, who was recently summoned to appear in a court in New Jersey, refused to kiss a very dirty Bible, which was presented to him in the administration of the oath. The episode occasioned a stir in court, and the physician in question was obliged to set aside his feelings to comply with the legal requirements.

We meet this difficulty, (says the *Med. Times*), by opening the book and kissing the open pages instead of the cover.

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THE TYPHOID OUTBREAK AT THE MICHIGAN STATE PRISON.—Dr. Vaughan recently reported to the State Board of Health that he had found typhoid fever germs in great abundance in the air taken from the sewers at the State prison at the time of the outbreak of typhoid fever there. The Secretary was authorized to make a final report to the Warden of the State Prison, giving the result of the investigation of that outbreak by the State Board of Health. The final report does not change the recommendations heretofore made.

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THE QUININE HABIT.—Truly says the *Evening Telegraph* of Philadelphia:

"The quinine habit is gaining strength every day. Dizziness, that you hear innumerable people complaining of in these days, can be traced to excess in the use of quinine. The good effects, that it is nearly always certain of, are lost by excessive doses. Too much quinine will also produce congestion of the ear and vibration of the auditory nerve. The growing habit of taking quinine for neuralgia and other like ailments, without consulting a physician, is altogether reprehensible, aud may lead to very serious results. Many cases of deafness are produced by overdoses and long-continued use of the drug."

The Death-rate in Tenement Houses.—During the week, ending June 23d, there were 801 deaths in New York City, and of this number 537 occured in tenement houses, while the enormous proportional number of 636 deaths occurred among children under five years of age. The deaths from contagious diseases (deaths that were preventable), amounted to 536. New York is certainly a great metropolis; it is a grand distributing point for the whole country, and in this general distribution the seeds of disease are not wanting, nor will they be until the disease-breeding tenement system becomes a thing of the past.

Furnace Water-boxes.—When next winter comes around look to it that the water-box on the furnace is kept full of *pure* water. A subscriber tells us that he finally traced some mysterious bad smells to the fact that his man was filling this box with the drippings from the ice-chest. These drippings contained particles of meat, very small it is true, but, the accumulation of a winter, deposited enough decomposing organic matter in this water-box to poison the air that the funace distributed throughout the house.

The Water-supply of Growing Cities is the subject for which a prize is offered for International competition in 1893. It is one of a series of annual prizes offered by the King of the Belgians, the value of which is 25,000 francs for each award. The essays of those desiring to compete must be addressed to the Minister of Agriculture, Brussels, before January 1, 1893.

Paris Sewage Farming.—The municipal council of Paris has recently authorized an extension of the sewage irrigation farms, making a total area of over 7,500 acres. The new farms at Achères will at present consist of 2,000 acres of sterile land, which the city of Paris will rent from the State. The city of Mery-sur-Oise owns 1,500 acres, 15 miles from Paris, and these are to be at once arranged for the reception of the Paris sewage. Besides the above areas the farmers of Gennevilliers and of Saint-Germain desire to prepare 2,500 more acres for the reception of sewage.

Impure Provisions in New York.—The meat inspectors of the Health Department of New York City, seized, during a recent week, 2,520 pounds of mutton, 2,680 pounds of veal, 1,325 pounds of beef, 170 pounds of pork, and 1,600 pounds of poultry as being unfit for food; 14,000 pounds of spoiled fish were also seized during the week. The fruit inspectors seized 1,350 pounds of bananas, 1,600 pounds of pineapples, 11,500 pounds of vegetables, 450 pounds of musk-melons, 675 pounds of peaches, and 900 pounds of apples.

Dead Horses in New York.—Somebody writes to the *New York Times* (June 23d), that ten notices have been sent to the Board of Health in reference to a dead horse that has (at the time of complaint), lain at the corner of 42d street and 6th avenue (a most populous portion of the city), for twety-four hours. Somebody in New York needs a stirring up, for in this hot weather dead horses are not very desirable neighbors.

STRANGE, IF TRUE.—A curious case is reported in the Savannah *News* of a gentleman living in Atlanta. One of his eyes is dark blue in color, and the other is a light grey. In the daytime—from sunrise to sunset—he cannot see anything out of the blue eye, but sees distinctly and well with the grey eye ; and from sunset to sunrise he cannot see anything with the grey one. His hearing is similarly affected. He can hear only on the blind side ; thus he can hear with one ear during the day time, and with the other ear during the night. He never discovered this until recently.

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SCHOOL BATHS.—Gottingen, Frankfort, Mayence, and other German cities are introducing baths in connection with the schools with good results. According to the *Gesundheits-Ingenieur*, a movement of this kind in the first-mentioned city met with some opposition on the part of the parents and children ; but very soon the baths were appreciated and universally liked. This is an innovation which some of our city schools, which have a little spare basement room and steam heating, could indulge in without so very much cost.

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DRY WEATHER DISEASE. — Extended observations at Paris and at Munich indicate that the sanitary condition of a locality depends on the amount of water contained in the ground. The years in which there has been a large quantity of ground water present have invariably been the healthiest years, while those in which there has been a smaller quantity have invariably been the unhealthiest periods.

BOSH.—Antiseptic stationery is the latest novelty (says an exchange). The children who are detained from school with such trifling ailments as scarlet fever or measles can now write their little exercises at home and so keep their school standing. It would be more to the purpose if germ proof books could be produced for use in circulating libraries. A germicide paper for bank bills, etc., would also be a boon, but a simpler plan would be to envelop the person in a germ-repelling atmosphere or aura.

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TAKE CARE OF YOUR HANDS.—The hands of all, both clean and filthy, touch many things in common. One should, therefore, be extremely careful after such contact, not to carry the fingers to the mouth. One author has very wisely said : "The only safe rule, in fact, is to be as careful of the hands as if one were a dentist—never to put them near the mouth without having first washed them." This precaution entails some trouble, and yet it may often avert the evil consequences which follow contagion.

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DON'T PUT POTATOES IN THE CELLAR.—When this issue reaches those of our readers who live in the country, they will be getting ready to take in their early potatoes. Don't put them in your cellar, as many are accustomed to do. Don't put any vegetables to decompose in the cellar and poison the air that arises therefrom into your houses. Remember, however, that potatoes exposed to the sun will be unhealthy potatoes to eat. Put them in some dry out-house, where they will be shielded from the sun.

Symptoms of Tea Poisoning.—According to Dr. Bulard, the action of tea is cumulative. It affects especially young persons who are anemic and debilitated, although we see it at times in persons of strong constitution. The symptoms of tea poisoning are: loss of appetite, dyspepsia, palpitation, nausea, vomiting, nervousness, sometimes resulting in hysteria, sometimes in mental troubles, and amounting to mania. Cardiac troubles are frequent, and accompanied by pain in the left arm, like that caused by angina pectoris.—*Il Seglo Medico* (Madrid).

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Longevity in Japan.—The population of Japan has increased, during 1887, to 38,507,177 inhabitants. Of this number, 1,086,001 persons were from seventy to eighty years of age; 247,055 were from eighty to ninety years of age; 12,000, from ninety to one hundred; and 97 were over one hundred years of age (73 women and 24 men). Among the women who were over one hundred years of age, 2 were past one hundred and nine, and 1 was one hundred and eleven years old.—*Riforma Medica.*

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A Few Things in Water.—

But if from man's vile arts I flee.
And drink pure water from the lea,
I gulp down infusoriæ,
And quarts of raw bacteriæ,
And hideous rotatoriæ
And wriggling polygastricæ,
And slimy diatomacæ,
And double-barrelled kolpodæ,
Non-loricated amœbæ,
And various animalculæ,
Of middle, high, and low degree;
For nature just beats all creation
In multiplied adulteration.
—*American Druggist.*

Exercise for the Corpulent.—Very many too full-blooded people (says the *Boston Journal of Health*) are very short-winded, and inclined to be asthmatic. This trouble conduces to bodily inactivity, but it can be very readily overcome by judicious effort. Slow walks on a level are first advised; then gentle slopes should be ascended by easy stages. By thus graduating the exercise the difficulty in breathing will disappear, and the heart, which is almost always weakened in corpulency, will become strengthened.

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Arsenic in Wine.—About a month ago a large number of persons in Hyères, France, were poisoned by adulterated wine. Analysis has recently shown that the wine contained a large quantity of arsenic, added for the purpose of hastening fermentation, and considerable quantities of arsenic have been found in the bodies of the dead exhumed for the purpose of analysis. A large number of the people of Hyères still present symptoms of arsenic poisoning.

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Hygiene for Travellers.—We once saw Dr. Thomas B. Reed, of this city, give a drink of water to one of his children in a railway car, and this is how he went about it. Filling the glass at the cooler, he placed a clean handkerchief over the top of the tumbler and the child drank the water through this handkerchief. We were struck and strongly impressed with the wisdom of this simple precaution, by which the child's lips were kept from contact with a tumbler that may have been but a short time before in contact with lips that were diseased.

FOOD INSPECTION.—According to the *Medical Record*, the United States Senate has passed the bill providing for the inspection of meats for export, and prohibiting the importation of adulterated or unwholesome foods, or vinous, spirituous, or malt liquors adulterated or mixed with any poisonous or noxious chemical, drug or other ingredients injurious to health. The bill further prohibits the importation of diseased or infected animals, or those exposed to disease or infection.

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SANITARY LEGISLATION IN NEW YORK.—The New York Legislature which recently adjourned passed laws empowering the State Board of Health to make rules and regulations for protecting from contamination all public supplies of potable waters and their sources within this State; making it the duty of local Boards of Health to destroy all animals affected with glanders; reducing the fees of the Health Officer of the Port of New York, and fixing his salary at $10,000.

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TO CLEAR WASTE PIPES.—A retired plumber thus gives a point for the gratuitous relief of householders: "Just before retiring at night pour into the clogged pipe enough liquid soda lye to fill the 'trap' or bent part of the pipe. Be sure that no water runs in it until the next morning. During the night the lye will convert all the offal into soft soap, and the first current of water in the morning will wash it away and clear the pipe clean as new.—*The Sanitary Era*.

KIDNEY DISEASE FROM SEWER GAS.—According to Dr. George Johnson, F. R. S., of London, sewer gas is a frequent source of renal disease, producing albuminuria, with fatal destruction of the kidneys. Dr. Charles S. Wood, of New York, believes in the malarial origin of Bright's disease, and cites a strong array of other authorities in support of his view; while others hold that malaria is a potent factor, though not by itself an originating cause.

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TOTAL ABSTINENCE AT YALE.—The Yale faculty has recently passed a law which forbids absolutely the use of intoxicating liquor in any shape whatsoever in any of the societies or organizations of students of the University. A member of the faculty, said recently that the law had not been passed on account of any especial recent excesses among the students, but as a matter of general university policy.

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THE RECENT DEATH OF A HARVARD STUDENT FROM OPIUM-SMOKING has created a sensation, not only because of the tragic death of a promising young man, but because it reveals the fact that opium-smoking is one of the dissipations which certain fast young men consider it smart to indulge in.

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MOSES JENKINS, colored, of Coffeyville, Miss., "the oldest person in the State, or, perhaps, in the United States," died at the almshouse in Tallahatchie county recently. "Uncle Mose, at the time of his death, was 115 years of age. He has lived in the county for more than 60 years."

Cure for Nervousness.—The victim of nervous disquietude (says an exchange) who finds chloral at night and the bromides by day necessities, should know that a cure must be sought among agencies which strengthen the nerves; those which merely render them dull and inactive will, after prolonged use, bring inevitable destruction of vital force. That means good food and plenty of it; exercise in the open air and plenty of it, and freedom from unnecessary worry.

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Special Diet.—M. Adrian has recommended to the Société de Therapeutique a nutritive soup prepared from a dessertspoonful of the following mixture:

Pulverized pork and dessicated fat	200 grams.
" beef (lean and roasted)	200 "
Various vegetables pulverized after cooking	200 "
Sugar of milk	150 "
Tapioca	150 "
Malt	50 "

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Profit and Loss.—Some foreigners (says the *Ledger*) living near Wilkesbarre celebrated a christening the other day by a drunken riot, in which two men were fatally injured. Two deaths to celebrate one birth puts the balance of trade on the wrong side, and, if continued, will result in extermination of the community.

The Best are the Cheapest.—The good things in the world are the cheapest. Spring water costs less than corn whiskey; a box of cigars will buy two or three bibles; a gallon of old brandy costs more than a barrel of flour; a full hand of poker often costs a man more in twenty minutes than his church subscription amounts to in three years.

Adulteration in Spain.—A Spanish magistrate, shocked and exasperated by repeated food adulteration, has issued a proclamation, aflame with righteous wrath, that "all wines, groceries, and provisions which, upon analysis, are proved to be injurious to health, will be confiscated forthwith and distributed to the different charitable institutions."

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Another Centenarian.—At Churchville, a suburb of Chattanooga, Tenn., died on the 23d ultimo, Marion Garlington at the age of 110 years. She was a native of Georgia, and distinctly remembers when George Washington was President. Her descendants number 200.

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A Cure for Wrinkles.—It is said that when lanolin is well rubbed in, it passes directly into the skin, and acts as a nutrient to the subjacent tissues, smoothing out the folds produced by the alteration of these structures.—*Texas Courier-Record of Medicine.*

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The University of Pennsylvania prize of $50, for the best examination in hygiene, was awarded to Hill S. Warwick, M. D., B. S. Thesis, "The Yellow Fever Epidemic of 1878."

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Dr. A. H. P, Leuf has been elected Director of Physical Education in the University of Pennsylvania, in the place of Dr. J. William White who resigned some time ago.

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The Blind in Egypt.—It is stated that one person in every twenty in Cairo is blind.

JEWISH TEMPERANCE.—Says Dr. Norman Kerr, the well-known writer on the physiological aspects of inebriety: "The temperance of the Jews is proverbial. Extensive as my professional intercourse has been with them, I have never been consulted for inebriety in the person of a Jew, while my advice has been sought for this complaint by a very large number of Christians. In my opinion, their general freedom from inebriety, in almost all conditions (there are very few exceptions to this rule), is as much due to racial as to hygienic, and more to racial than to religious influences."

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WOMEN IN HYGIENE.—From the last announcement of the Women's Medical College of Pennsylvania, we are deeply gratified to note that candidates for the degree of Doctor of Medicine must have attended at least two courses of lectures on hygiene, in which branch they are obliged to pass an examination. Women are certainly extremely in earnest when they take hold of a subject, and we are very glad to see this additional evidence of a wisely progressive spirit.

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THE NEW FIRST READER.—"Is the boy in the field?"

"Yes, he is in the field."

"What is the boy doing in the field?"

"Stealing cucumbers."

"Does the man see him?"

"He does."

"But why does he chuckle and grin instead of driving the boy out?"

"Hist! He is the man who keeps the drug store on the corner!"—*Detroit Free Press.*

THE ITALIAN SOCIETY OF HYGIENE will hold its second congress in Brescia, on September 1, 2, and 3, 1888. There will be an exhibition of publications on hygienic and allied subjects, of hygienic instruments, apparatus and appliances, and of chemical and pharmaceutical products related to hygiene.

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LEPROSY NOT INCREASING IN HAWAII.—Lord Bishop Willis, of Honolulu, passed through Chicago, recently on his way to England. He says the generally prevailing idea that leprosy is on the increase in the Hawaiian Islands is erroneous. Quite the contrary is the case.

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ADULTERATION OF LARD.—During 1887, 50,000,000 pounds of cottonseed oil were used to adulterate lard in this country (says the *Medical Register*). The trick has been found out, and prohibitory laws are being passed in certain countries. As a result, the exports fell off 13 per cent. in October.

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MERCURY IN BLOCK-TIN.—A large mortality among workmen in a tin smelting place in Nuremburg caused an investigation, which showed that the block-tin, contained 3 per cent. of mercury.

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BOARDS OF HEATH IN OHIO.—By a new law in Ohio a board of health is to be established in every city or village containing more than 500 inhabitants.

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COMMUNICATIONS.

SANITARY PROTECTIVE ASSOCIATIONS; OR LIFE INSURANCE WHICH DOES INSURE LIFE.*

BY BENJAMIN LEE, A. M., M. D., PH. D.,
SECRETARY OF THE STATE BOARD OF HEALTH, OF PENNSYLVANIA.

We are all familiar with the idea and principles of Life Insurance. The gigantic development of this idea in its business aspect in these later days has astonished all thinking men. Its palaces form the chief ornaments of the principal streets in our cities. Its agents swarm like locusts through the land. Like "pallid death," this familiar and intrepid visitor knocks alike at the mansion of the opulent and the poor man's cabin. Like the congress of the late ill starred confederacy, he is ready to "rob both the cradle and the grave." Far be it from me to discourage his well-meant, though occasionally, perhaps, somewhat irritatingly persistent presentation of his well worn theme, or to belittle the good which has been accomplished through his efforts, or the beneficent efforts of the system. But am I not justified in saying, that it is mis-named? That it is really not *life* insurance, but *death* insurance? That by just so much as a man's life is shortened, is the value of the pecuniary provision which he thus makes for his surviving family increased? That the man who dies within a year after taking out his policy, makes a better thing of it from a business point of view, than he who lives on for twenty or thirty years, paying his premiums every year? So well is this fact understood, that the companies have thought it necessary to remove the temptation thus held out to the policy holders to shorten their lives, by declaring that suicide shall be a ground for voiding the contract. In direct contrast to this somewhat depressing, though eminently useful form of associate action for mutual benefit, I desire to call your attention for a few moments to another kind of association, the direct object and proven result of which is to lengthen the lives of those participating in it, and which may therefore lay claim to the title of the *True Life Insurance.* Nor does it promise length of days alone. For while its right hand holds out that precious guerdon, in its left are the "riches and honor," which necessarily flow from the possession of a sound mind in a sound body. To the citizens of Edinburgh, Scotland, belongs the honor of having originated the conception of a voluntary combination and pooling of resources for the purpose of mutual life and health insurance. This was embodied in the "Sanitary Protective Association of Edinburgh," just ten years ago, and the movement has been in successful operation ever since.

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*Read before the Pennsylvania State Sanitary Convention, at Lewisburg.

The following is a "General outline of the Objects of the Association and Privileges of Members:

1st. To provide its Members, at moderate cost, with such advice and supervision as shall insure proper sanitary condition of their own dwellings.

2d. To enable Members to procure practical advice on moderate terms, as to the best means of remedying defects in houses of the poorer class in which they may be interested.

3d. To aid in improving the sanitary condition of the city.

The first inspection does not cause any disturbance to household arrangements. It is followed by a report making specific recommendations, if any improvements in the household arrangements are thought necessary. The Members are not bound to carry out these recommendations.

The subsequent annual inspection will, so long as the sanitary arrangements remain in working order, entail no expense beyond the annual subscription.

The following is a formal statement of the privileges of Members: The annual inspection spoken of in the second paragraph, will form the main business of the Association. It is believed that no system of drains, or other sanitary appliances, can be depended upon to remain in perfect order without skilled inspection; and this skilled inspection can be cheaply and efficiently provided by the Association.

Each Member is entitled to the following privileges in respect of property within the Municipality.

1. An immediate Report by the Inspecting Engineer of the Association on the sanitary conditions of one dwelling or property, with specific recommendations, if necessary, as to the improvement of drainage, water supply and ventilation, and a report upon the water by the Analyst.

2. An annual inspection of his premises, with a report as to their sanitary condition.

3. Occasional supplementary inspection and advice concerning the dwelling or property in respect of which he is a subscriber.

4. Each Member by his annual payment secures the above privileges in respect of one dwelling or property, occupied or designed by him. Should he be interested in two or more dwellings or properties, as owner or occupant, he may secure equal privileges in respect to them all, by paying the annual subscription for each.

5. A report, to be obtainable on payment of a special fee, on any dwelling or property, or plans thereof, which he may wish to hire or purchase.

6. Reports by the Officers of the Association as to the sanitary condition of any dwellings or properties of the very poor, on payment of a moderate fee.

7. A report without fee, upon the sanitary condition of any public building, as church, school house or place of public resort, within the city.

So great a degree of public confidence did the Association inspire by the thoroughness of its inspections and the practical wisdom of its suggestions for sanitary improvement in individual cases, that it was announced at its sixth annual meeting that the Bank of Scotland had by a recent resolution, placed the whole of their branch banks throughout the country, numbering about one hundred, under the supervision of the Association as regards sanitary matters. The remarkable apathy of the class of people, who would have at once joined a Sanitary Association, viz. : the hotel keepers and lodging house keepers, was however, strongly commented upon. This need not be wondered at, when it is borne in mind that, out of hundreds, only two of the class referred to, applied for inspection. It is only by reading reports of this kind, said the *British Medical Journal*, of April 7th, 1883, that one can form an idea of the insanitary condition of our houses. The report showed that 612 inspections had been made in the course of the year. About one hundred country houses had been inspected and reported upon, and among them ninety per cent. were found to have direct communication existing between their drains and the interior of the house; eighty per cent. had their water storage more or less faulty; and no less than fifteen per cent. had the main cisterns in direct communication with large brick cess pools, filled with putrefying filth.

The example of Edinburgh was quickly followed by certain public spirited and enlightened citizens of Newport, R. I., who in November of the same year (1878), established the *Sanitary Protective Association of Newport*. The rapid growth of that popular seaside resort and the immense increase of its population during the summer months, had completely outstripped the limited system, provided by the town authorities for disposing of the waste of all kinds, which such an aggregation of human beings would lead to. It was necessary that some concerted action of a positive nature should be taken, if the fair fame of the city, as a health resort, was to be saved from reproach.

The secretary of the Association in his second annual report, said—and I quote, because with slight local modifications, I have no doubt that his assertions would not be altogether inapplicable to Lewisburg:

"The inhabitants of Newport, owing to the situation of their city, have always enjoyed remarkably good health, and the fact that this has been the case, is looked upon by them with pride and satisfaction, and they have been unwilling to open their eyes to the present or to look forward to the future. It is sufficient that the pure air of heaven has, in the past, brought health and longevity to them, and it is taken as a matter of course, that such will be the case for all time to come.

To be sure, the breezes, as they blow fresh from the sea, are pure as of old, but as they come sweeping through the now thickly populated town, passing through back yards filled with mire of slops and filth, and over stagnant water and marsh, the receptacles of garbage and sewage, the pure oxygen is soon contaminated with gases which are not health-giving, though they may not immediately kill.

There was a time when wells dug down into the solid rock furnished pure spring water. By an occasional cleaning of the well, one generation after another could go on using this water without a doubt of its purity. But estates have been divided and subdivided, other wells have been sunk, and new cess-pits dug, the latter, perhaps, on account of the narrow limits of the place, close to the well of some old homestead.

Soon the soil becomes impregnated by the liquid fifth, and, naturally, the water of the wells in the neighborhood is infected. This has continued until it is the exception where the water of a well is found fit for domestic purposes.

In some portions of the city, owing to the neglect of the public authorities to remedy existing evils, the air became laden with poison germs, and so reduced the system of many, that they readily fell victims to any contagious disease which might spring into existence.

The importance of placing under strict supervision the inmates of a house where such disease existed, was overlooked, so that the death-rate of Newport, though small as compared with other cities, was large in those diseases which might have been prevented.

Eminent physicians, summer residents of Newport, anxious as well for the reputation of the city, as to adapt the place to the necessities of city patients, alluded in print to the importance of measures being taken to improve its sanitary defects, and complaints were addressed to the city authorities by native physicians and others. But these appeals were unwelcome and unheeded, and, far from what was earnestly desired resulted in openly expressed ingratitude to the authors of them.

Although the Board of Aldermen were empowered by the State to appoint a Board of Health, which should have all the powers and duties conferred upon the Board of Aldermen, as a Board of Health, and notwithstanding the wish of the people, and a memorial signed by the physicians of the city, yet they practically refused to exercise their powers, nor would they confer them upon others."

A better idea of the scope of the work which it laid out for itself and the searching character of there reforms which it desired to effect, cannot be given than by reference to a circular issued in the second year of the existence of the Association. It says:

"The sanitary condition of houses and cities has been, for the past few years, occupying the attention of physicians, sanitarians and scientific minds throughout the civilized world to such an extent, that all intelligent men are now keenly alive to the importance of proper sanitary surroundings and especially the sanitary condition of their own individual habitations. The questions now arise in the minds of every one, whether they are occupying houses of their own or hired houses, or are about to seek a new house:

(*a*). Are the sanitary surroundings of the house perfect? Do the trees and shrubbery permit sufficient exposure of it to the sun?

(*b*). Is the water pure and drinkable? If from a well or cistern, has it connection with the external air?

(*b*1). Is there direct connection for cooking and table use, where city water is employed, between the main and the kitchen? (Adopted June

13th, 1882).

(*c*). Is the cellar dry, well ventilated and free from decomposing matter, which may give forth seeds of sickness and death, and has it a drain? This drain must be wholly unconnected with any sewer.

(*d*). Is the cellar air entirely excluded from the air supply of the furnace?

(*e*). Has every bed chamber free ventilation and direct means of communication with the external air?

(*f*). If contagious or infectious disease has occurred in the house, have the sick chamber, etc. (bedding, wearing apparel, curtains, carpet and upholstered furniture), been thoroughly disinfected, and the wall paper removed?

(*g*), Has each water closet means of external ventilation and not into an entry or bed chamber?

(*g*). Is provision made for ventilation of the interior space of the water closet, by a current of air flowing through the same to a ventilating pipe or flue, passing above the house-top, and independent of the soil pipe or its extension? (Adopted September 13th, 1881).

(*h*). Are the soil pipes in a sound condition and easily accessible for examination? Are they of iron, with lead plugged joints (the only true condition for a properly constructed soil pipe)? or are they of lead? and if of lead, have they been in the house for a number of years, and thus become perforated with holes, through which sewer gas escapes into the house?

(*i*). Has the soil pipe a proper vent through the roof?

(*j*). Is the soil pipe in its exit through the foundation of the house, of iron or of earthen-ware? if of the latter, is it broken off in or just outside of the foundation, so as to allow the sewage matter of the house to find its way through the foundation (a condition which is almost always found to exist where earthen-ware pipes are used)?

(*k*). If there are set bath tubs, basins or wash tubs, are they securely trapped? Is the kitchen sink safely trapped? It must not be forgotten that the ordinary bell trap does not perfectly exclude sewer gas, which its water absorbs and transmits, and that the S trap is liable to be "syphoned," or emptied by inward suction, so as to permit the escape of gas into the house from the soil pipe or drain.

(*l*). Is the waste water pipe of the refrigerator entirely cut off from all connection with the soil pipe?

(*m*), Is the cesspool near the foundation wall? Is the cesspool a loose one? and is there any overflow or leakage into the foundation, cistern or well?

If all these conditions are answered to the satisfaction of a sanitarian, then one may consider his home in a healthy condition, and the occupants of it free from all danger of contracting Diphtheria or Typhoid fever from it. It is the almost universal opinion of physicians that every case of Diphtheria and Typhoid fever is preventable, and that wherever a case occurs, there are some bad sanitary surroundings. Even where Diphtheria, like Scarlet fever, has originated from direct contagion, it is probable that exposure to unhealthy influence at home has predisposed the individual to contract the disease more easily, and it is certain that such conditions render both of these diseases more liable to become fatal. When these facts are substantiated does it not behoove every one to see that his house is put in order?

With a house in perfect sanitary condition (which it is possible for every one to have), many deaths, and a vast amount of sickness and physical debility will be saved, and the period of life lengthened.

How many house-holders are there who are competent to answer all these questions intelligently? Especially those in regard to the arrangement and condition of plumbing, sewerage and drainage? Now it is precisely to provide a system by means of which every owner of a home may have them accurately and understandingly answered, and in case the answers are unfavorable, can have the defects which they indicate remedied, and his home put in a thoroughly safe condition, that I propose the formation here in Lewisburg and in every town in the State of a sanitary protective Association. And in order to facilitate the inauguration of such a movement, I have prepared a draft of Articles of Association which may serve as a guide to any who desire to undertake it. I have thought it advisable to make them as brief as possible, so that in the event of its being deemed advisable by the Association, they could be made use of as a charter, leaving the duty of framing by-laws for the administration of the affairs of the association to the Council, after it has had an opportunity to study the field of work and ascertain its requirements. I desire to preface it, however, by the statement that it is not intended that such an association should substitute or conflict with municipal inspection, which cannot be too earnestly encouraged, but rather to supplement the action of the constituted authorities in protecting the public health.

ARTICLES OF ASSOCIATION
OF THE
Citizens' Sanitary Protective Association of ———.

NAME.

We, the undersigned, citizens of Lewisburg and of the Commonwealth of Pennsylvania, do hereby associate ourselves together as an Association, to be called "The Citizens' Sanitary Protective Association of ———."

OBJECTS.

The objects of this Association and the purpose for which it is formed shall be:

First. To insure the proper sanitary condition of the dwellings of its members, by providing for their inspection at stated intervals, and at a moderate expense, by competent experts.

Second. To enable its members to procure practical advice, on moderate terms, as to the best means of remedying defects in the houses of the poor in which they may be interested.

Third. To aid the municipal authorities in improving the sanitary condition and sustaining the good repute of the city, by reporting to the proper department such infractions of its regulations as come under its observation and by any other means which in the opinion of its Council may seem calculated to promote this object.

MEMBERS.

Any citizen may become a member

upon the payment of an annual subscription of——Dollars until———

After this date the Council shall have the power to increase the annual payment to be made by new members, but not that made by original members.

COUNCIL.

The number of its Directors who shall be styled the Council, shall be eleven, four of whom shall at any time constitute a quorum. The Council shall manage the affairs of the Association. Its members, who shall receive no remuneration, shall be elected by the members of the Association from their own body. The Council shall from their own body elect a President, Vice-President, Recording Secretary, Corresponding Secretary and Treasurer.

The Council shall have power to frame by-laws for the better administration of the Association, but not to alter the objects for which it was formed. The Council shall meet as often as may be found necessary for the transaction of business, and shall have the power to call special meetings of the Association.

The Council shall appoint and shall have power to dismiss all paid officers of the Association. These officers shall consist of a Consulting Engineer, an Inspecting Engineer and a Chemical Analyst.

The Consulting Engineer shall give advise to the Council when requested to do so, both as to general principles and particular cases presenting any difficulty. His remuneration shall be fixed by the Council, and based solely upon the amount and character of the services rendered.

The Inspecting Engineer shall visit the premises of members as soon as possible after receiving notification to do so, and shall in all cases report in writing to the Council, who, when they have approved the report, will transmit the same to the member interested. In cases of emergency a verbal report shall also be made by him to the member interested. His remuneration shall be fixed by the Council.

MEETINGS.

A meeting of the Association shall be held annually on the

at

to hear the report of the Council and to elect members of the Council for the ensuing year.

PLACE.

The place in which the business of the Association is to be transacted is the——————

TERM.

The term for which it is to exist is perpetual.

STOCK.

There are no capital stock and no shares. The funds of the Association shall be held invested and disbursed by the Council in accordance with the By-Laws. But the annual income from such fund which the Council may hold shall not exceed One Thousand Dollars.

SUBSCRIBERS.

The names and residences of the subscribers are as follows:

I entertain no doubt that the adoption of such a plan by a considerable number of the influential citizens of this beautiful, and I presume moderately healthy town, would result in the course of a year in a decided decrease in sickness and deaths from that class of diseases which sanitarians call preventable.

HYGIENE OF FARMS AND FARM-HOUSES AND BUILDINGS.*

By J. CHESTON MORRIS, M. D.,
OF PHILADELPHIA.

In the course of twenty-five years of interested observation, I have often been very forcibly struck by the little attention paid to the subject which I propose for your consideration, and by the too often very apparent result of this neglect and indifference. In order that any animal, two-legged or four-legged, should thrive, certain conditions of life must be present; there must be a sufficient supply, not only of digestible food, but also of pure water, fresh air and shelter from inclement weather. We all have often heard that cleanliness is next to godliness, but I fear too many of us are satisfied often with the mere form of one as well as the other, or are content to admire both of them a long way off. This may seem a very sweeping charge; but after I have brought in my array of facts, I will ask you to review in your own minds the surroundings of your own houses and barns, before pronouncing it unjustified. Some years ago, at a meeting of a farmer's club to which I belong, I described what I had seen on my way to the meeting: a well-built stone house about half way down a hill-slope, with a large barn standing above; a little stream started out of the hill-side close by the barn-yard wall, and ran below the house to the spring-house, close to which stood the milking shed. From this spring house the family obtained their drinking supply. In wet weather it was impossible from the lay of the ground that the leachings from the barn-yard and milking sheds should do otherwise than contaminate the water supply; and then the usual escape for all the drainage was into the stream below. In this way the best part of the manure was constantly lost. The members of the club looked conscience-stricken; nearly every one of them thought I had been describing his premises.

Such a condition of affairs is indeed too common. But what shall we say about the pump which draws water from the well in the barn-yard? True, that is supposed to be only for the cattle to drink. But how often have we seen well-bred animals turn with disgust from the cool, but highly impregnated water, and refuse to drink until driven to it by uncontrollable thirst? How often will your horse sensibly wait till you have driven him on up the road, and then stop by some to you uninviting-looking streamlet, and insist on there wetting his fevered tongue? And which of us has not felt an unspeakable satisfaction, a sort of renewal of youth and strength, as we have quenched our thirst, during some mountain climb, from some bounding stream or cool spring from a rock under the shady trees? What glass of nectar or champagne can equal that gift of Heaven? But when we build our houses and take up our abode by the stream, too often we pollute it so that it becomes the bearer of disease. Convenience makes us locate our privies, cesspools and kitchen middens close at hand, and there are thrown the offal, the waste, the *debris*, the cast out excretions of our bodies to ferment and putrify. Through winter and summer the accumulations go on; occasionally we clean up our kitchen yards and pig-pens when the festering mass becomes too unsightly or offensive, but all the time there is more or less of this death-producing dirt allowed to accumulate around but too many of our houses. Not only is the air we breathe thus contaminated, but our water supply. We dig a well close by our kitchen door, and thus drain into it the liquid which has percolated from these heaps. It may be some years before we are made aware by an outbreak of typhoid fever or diphtheria of the poison we have been regularly imbibing. I was called to see a family of which several members were thus prostrated. Every effort to locate the cause of the disease was futile, until I looked at the positions of the well and of the privy. These were within thirty feet of each other. The privy was properly protected by a box receptacle, which could be, and nodoubt was, emptied from time to time, but this was only a late addition; formerly there was only a vault, and the overflow from the box and the rain in wet weather could get into the soil. If you remember that one foot in depth of a well will drain an area of thirty feet in diameter around it, you will see how inevitable it was that sooner or later the drainage from that privy should get into that well. Great was the wrath of the lady of the house, when I announced my belief that the well water was contaminated. She was sixty years old, had lived there all her life, her father before her had drank from it and lived to an old age and raised a large family there. But analysis, as well as bitter experience, testified to the correctness of the accusation. Besides the privy, not more than a hundred feet away stood a fine barn with over forty head of stock, and the barnyard was soaked and piled with manure. After a hard battle a fresh water-supply was secured, and the family has since remained healthy.

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*Presented before the State Sanitary Convention at Lewisburg.

Another of these "mysterious visitations of Providence" (why will men be so blasphemous?), happened in the family of a wealthy farmer and manufacturer of "phosphates." His beautiful house stood not far from his factory, where old bones, South Carolina rock and decayed fish were treated with acid and mingled with sandy loam to form a highly odorous compound which assailed our nostrils as we whizzed by daily in the cars. Remonstrances and protest were in vain; it was not until sickness and death in his own household taught him, that the greed of money getting was brought into obedience to sanitary laws.

Another instance occurred under my observation in the family of one of the wealthiest citizens of Philadelphia. At his beautiful country seat north of the city, an old cess-pool which had long been unused and covered, was opened and cleaned. Within a few weeks his two daughters were brought to the brink of the grave by typhoid fever of the most virulent type, which was communicated to the children of one of them, who was married, by infection. This whole outbreak I carefully watched; it lasted through three months, and was due, I believe, to air allowed to enter the house through a sewer-pipe, which communicated from the closet to the old cess-pool, up which a draft was created when the cess-pool was opened.

Such are a few of the facts that I have observed. How easily might we avoid such death-dealing provisions! and yet how careless we are about them, nay how incredulous, how disposed to go on in careless slovenly hap-hazard ways, how apt even to resent the impudent interference of those who presume to tell us how we ought to live, and to retort upon them that it is well enough to tell folks in the country how to live when we have brought our standard of health in the cities up to the level of the country. But I am sure I will be borne out by the experience of every country physician when I say that such diseases as typhoid fever, diphtheria, scarlet fever and measles have quite as many victims in the country as in the city. There is many a household with a vacant chair by the hearth in every neighborhood in our broad land, which can also testify to the terrible truth of what I have been saying. Nor is the subject exhausted, I have merely touched lightly upon one phase of it. Every farmer knows the effect of badly ventilated, overcrowded, filthy stables and surroundings on the health and growth of his stock; he may buy improved breeding animals, but their produce soon runs down even below that of the hardened natives, who have in the "struggle for existence," survived the privations and squalor which too often prevail in our barns and cattle-sheds; and then he turns round to abuse the breeder who sold him such animals, instead of setting to work to remedy the defects he knows of at home but too well!

And while speaking of this, I wish to say a word on ventilation. This does not mean a *gale* blowing *always* through the building, it means regular, but quiet, almost imperceptible but continuous, change of air in due proportion to the occupants of a given space. The freer the supply the better, provided these conditions are maintained. Our domestic animals as well as ourselves need shelter from cold and from heat, and from the wet. They as well as we suffer from too close quarters and want of sunshine. They as well as we, suffer from draughts and insufficient protection from the wet. We curry our horses, and their sleek coats and gleaming eyes reward our care; we neglect our cows and their mangy coats and gaunt sides tell of the difficulty they have had to struggle through the winter. We neglect our sheep-pens, and the half frozen little lambs start in existence feebly, or die as fast as foundlings in a hospital from their exposure. Nay, too often our own families are allowed to live huddled together in close rooms around a scanty fire or a hot stove, with damp garments or leaky shoes, till colds run into consumptions, aggravated by insufficient or badly prepared food. And then we rail at the hard times, and the bad weather, and the poor crops, instead of applying our common sense to stop leaks, to prepare healthy food, to mend torn garments, to earn healthy appetites and sound sleep by hard work. But all this is digressing from my subject, apparently; and yet it is essentially bound up in it. Healthy homes and how to make them, that means happiness and prosperity. We need food, air, light, heat and water. We need these pure and abundant. We cannot exist long in health without them. We cannot do good work without them, and therefore, we cannot prosper without them. Whatever tends to improve our supply of these necessaries of life and existence, tends to our good. Why should we be so slow to lay hold of the results of all of our experience in our every-day life?

SCHOOL HYGIENE.

BY D. F. LINCOLN, M. D., OF BOSTON, MASS.

(Continued from page 268.)

However encouraging these results, it is seen that perfection is not yet reached. By way of comparison, a few selected data are given, showing the number of parts in 10,000 of carbonic acid in the air of various localities. (See table).

It is probable that the bad air of German schools is one cause of the prevalence of near sight and other defects of vision.

The standard of 6 per 10,000 is not likely to be reached in schools at present. Perhaps we shall have to admit the practical justice of Prof. W. R. Nichol's remark, that 10 in 10,000 is as low as we can expect to find in schools with fair ventilation.

AMERICAN SCHOOLS.

		No. of rooms exam'nd.	Parts CO_2 in 10,000.	Observer.
Philadelphia,	1875	9	12.2	E. Thompson.
Boston,	1870	40	14.5	A. H. Pearson.
Boston,	1875	111	11.9	Draper & Nichols.
Boston,	1880	39	15.6	W. R. Nichols.
Michigan,		46	22.9	R. C. Kedzie.
N. York city,	1873	17	20.8	H. Endemann.
Lynn, Mass.,	1883	8	17.5	Prof. Hills.

GERMAN SCHOOLS.

Annaberg, 5 schools,	39.9	O. Krause.
Wilhelm's Gymnasium in March, . . .	55.8	Oertel.
Wilhelm's Gymnasium in July, ...	22-9	"
Celle Gymnasium, various rooms, . . .	20.50	Baring.
" Volks-schulen, most rooms,	90	"
Celle, Volks-schulen, one room,	120	"

Much has been said regarding the proper position for outlets and inlets for air. One false view may be corrected at once, the notion that carbonic acid gas is the agent that is chiefly noxious, and that this gas seeks the lower levels. It is not specially dangerous in quantities found in schools—the animal vapors from skin and lungs are more so—but it represents the degree of organic pollution fairly well. It is not found chiefly at a low level. If there is any difference, the upper levels are sometimes more impregnated, owing to the breath rising in a cool room; but the difference is small, and, in a room with rapid ventilation, not distinctly traceable. The air from the pupil's lungs may be assumed to be distributed through the apartment rather quickly. The process of ventilation then becomes, not a removal of the exhaled air, but a dilution by the introduction of large quantities of fresh air.

A test for carbonic acid is not easily made in a way to satisfy scientific demands, but an approximate test can be made in a minute by an unskilled person. An ounce of fresh lime-water in a ten-ounce bottle of the air to be tested, shaken vigorously for half a minute, will indicate a fair degree of purity, if it is not distinctly made turbid. One should have a little practice, even at this simple operation.

The writer has endeavored to make a convenient and portable apparatus which will give an indication of the number of parts in 10,000, within a range of error not exceeding one part. To some extent the instrument is successful. It is based on Lange's method. A series of bottles of known size was chosen, graded from large to small, and fitted in a wooden frame. The whole apparatus is carried to the room to be tested. The bottles have been previously filled with water, and when inverted the air fills them at once. They are stoppered, and carried to the laboratory, where a given amount (say one-half ounce) of lime-water (chosen as being less liable to change than baryta-water) is introduced into each, and also a few drops of a solution of phenolphthalein, which gives a rose color to lime-water. By shaking for a good many minutes the carbonic acid is made to neutralize the lime; the approach of complete neutralization is marked by the fading of the rose color; and when satisfied that the process has gone on long enough, we select the largest bottle that shows the complete change, and say:—

The air in this bottle measures (say) 10 ounces; it contains enough carbonic acid to neutralize (say) ½ ounce of lime-water; how much carbonic acid is here? and how many parts in 10,000 parts of air does it stand for?

The calculation is of course made previously for each bottle, so as to reduce the labor of a test to the mechanical operation. The act of shaking is fatiguing, and the charging of the bottles requires some practice, and a well graduated tube. No figures are here given, but by comparison with simultaneous analyses made by Pettenkofer's method, an encouraging degree of accuracy has been observed. The point of difficulty in this and similar processes is to determine when the carbonic is to be considered as having been fully taken up by the lime. This fault seems to attach to Mr. Owen's ingenious process, given in Billing's "Ventilation and Heating."

Source of Supply of Air. The purity of the source must be carefully guarded. A wooden duct is the usual means of conveying the air across the cellar to the furnace. Such ducts easily open at the joints, and let in the cellar air; hence painting from time to time may be useful, unless tin be substituted, or galvanized iron. The interior should be accessible in some way for cleaning, as dust cannot but accumulate with time. The inlet, out of doors, is to be guarded with a wire screen, and is so situated as to be out of the way of mischievous persons. Bad smells are sometimes noticed in a school, which enter through this channel. It is hard to tell, in certain neighborhoods, just where to place the opening. The ground is damp; the air at ten feet is odorous for various reasons; and at thirty feet the smoke of neighboring chimneys is blown into the inlet; it is usual, however, to make the cautionary remark that malaria and dampness linger near the ground, and, as a rule, ten feet from the ground is a good place.

Scrupulous cleanliness of the cellar is necessary. If there are water-closets there, they had better not be near the ducts, nor even in the same division of the cellar, since the ducts are provided with doors which are liable to be left open contrary to orders. The misuse of such valve-doors is one of the crying sins of janitors. Many a master has a perpetual warfare with this functionary on account of this. The janitor's object, first and last, is the saving of coal in order that he may receive credit for economy, and his habit is to close the outer valve, opening the one that leads from the cellar, thus feeding his furnace or coils with cellar air at 60°

instead of the cold air out of doors. In this way the writer has found a school-house filled with air which must have passed through the furnace two or three times, being drawn down through the entries to the cellar, and then sent back through the furnace. Excessive heating of the air is not so frequent a fault at present as formerly. A report made to the Boston school board in 1846 complains that the air sent to school-rooms is frequently heated to 500° or 600°. This may be simple exaggeration, but there is no doubt that a heat approaching 200° is not uncommon at present. Circumstances alter the requirements greatly, but for schools by day-light, the range should not much exceed 120° F., nor fall much below 80°. In order to fulfil this demand furnaces and boilers should be made very large. Steam heating is one of the best methods. The pressure upon a boiler of proper capacity need never exceed ten—perhaps it should not exceed five pounds to the square inch, and it should frequently run down to one pound. The danger of explosion need hardly enter into the calculation if there is good management.

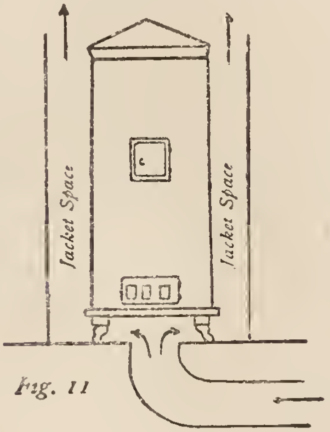


Fig. 11

Ventilating-Stoves. A useful apparatus for aiding ventilation is furnished by a class of stoves which are provided with an inlet for fresh air, and a chamber for warming it before it is introduced into the room.

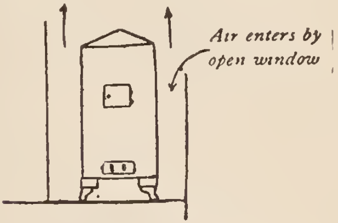
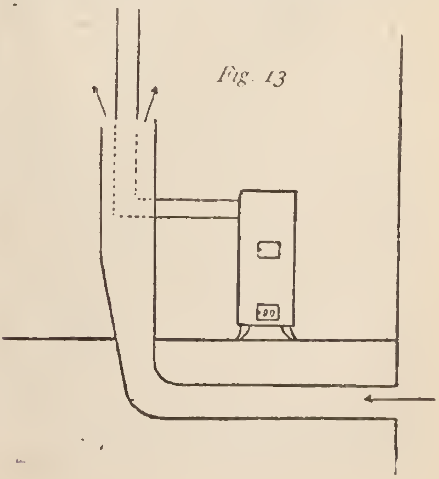


Fig 12

Figure 11 shows a stove having a jacket of sheet metal, a space between the jacket and stove, and a fresh-air flue, with a valve operated from the room. The principle, as regards air-supply, is not essentially different from that of the "Fire on the Hearth," the "Jackson Ventilating Grate," and Galton's ventilating fire-places. The method is practically valuable, though the stoves I have seen do not really supply enough air; that is, a stove large enough to *heat* a given room does not introduce nearly enough air to *ventilate* it. The column of hot air is very short, and the velocity moderate. Yet, where stoves are to be used, there is an obvious gain in using this kind. It ought to be supplemented by a powerful chimney-draught, the



chimney being made of liberal size, and heated by the passage of the stove-pipe; an opening for ventilation is to be made near the floor. In still other ways ventilation may be aided by the stove-pipe, as will be seen from Figs. 13 and 14.

Figure 12 shows a screen (supposed to form a semicircle) placed by a stove near a window, which is opened.

Figure 13 is like Fig. 11 in principle.

Figure 14 shows how a lower story may be ventilated.

The last four illustrations are from Billings' "Ventilation and Heating."

The evaporation of water in connection with heaters is probably useful, but the writer is not inclined to consider the matter one of primary importance. It is successfully dispensed with in some of the best ventilated new wards in hospitals.

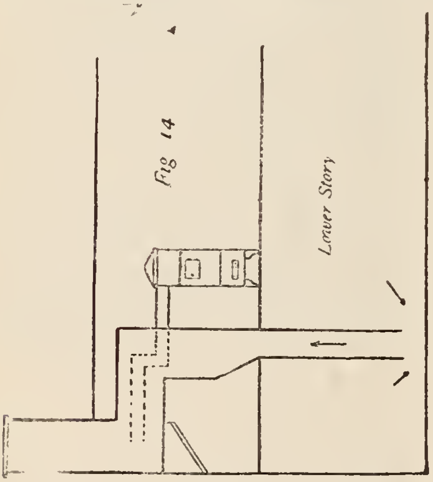


Fig 14

Children often come in with cold and damp feet. It is desirable to provide some kind of foot-warmer in the hall or basement. A good one is made of an iron plate, 2½ or 3 inches thick, set on a flat steam-coil.

Opening Windows. This may be regarded in two lights, according as the scholars are *at work*, or *moving and exercising*. To keep windows partly open seems an absolute necessity in many school-rooms. In one-roomed country schools, one of the first steps in sanitation is to insist on the upper sashes being arranged so as to be lowered. An open window is an evil, nevertheless, in cold weather. The palliative measure to be recommended is a strip of board a few inches wide placed so as to deflect the current from under the lower sash, and make it pass above the heads of pupils. This is a decided mitigation of the draught. It is very often liked in rooms where the ventilation is otherwise bad. A tilting sash at the top of a window cannot safely be used in winter. Such a sash, however, ought to be placed over every room door to enable the occupants to share to some extent in the purer air of the entries. There is no question of the good done by temporary opening of windows and doors for a minute or two while scholars are exercising. The effect may be supposed to disappear in two minutes or so; but when combined with a short physical exercise in the standing posture, its effect, both moral and physical, is undeniably good. In a very carefully conducted school known to the writer, this is done every hour, the period of five minutes being allotted for that purpose, unless there is a regular recess. At recess time, also, it is the rule that no child shall remain in the rooms, but that all shall go to the play-rooms under charge of their teachers, the windows in the mean time being opened by scholars deputed for the task. These measures, well carried out, greatly relieve the condition of a school which has no efficient system of flue ventilation.

The "Eureka" ventilator is an opening in the wall to let in air directly. It has a valve, and the passage is bent so as to throw the air upwards. It is a useful accessory in some cases where a thorough ventilation is not planned for. Similar openings are often found behind steam-coils in school-rooms. Their utility is delusive; they deliver a very small quantity of air, and are liable to be stopped up by accident, or for the purpose of keeping out the cold.

Much has been said of the supposed capacity of cast-iron stoves to let carbonic oxide gas pass out through their pores, thus contaminating the air with a peculiarly deadly poison. The present weight of evidence does not sustain this belief.

(*To be continued.*)

SANITATION IN MINING TOWNS.*

By SPENCER M. FREE, A. M., M. D.
INSPECTOR TO THE STATE BOARD OF HEALTH.

It is with pleasure that I stand before this audience of progressive sanitarians and plead the cause of that large class of the population of this State, the product of whose labor warms our homes, cooks our food, runs our machinery, and drives our locomotives, without which this convention would be an impossibility today. Feeble is the plea, for poor is the pleader, but when both of these have been forgotten may the constant presence of the miner's labor be to you all a daily reminder of that great cause of humanity which I represent.

To discuss this subject properly it is necessary to consider the companies, the surroundings and the people with which it has to deal. My remarks may not apply to *every* coal plant. There may be some arranged and conducted on good sanitary principles. If so, I have not heard of them. I shall speak from facts obtained by personal observation and from life and practice in mining towns.

I think my descriptions will apply to nearly all coal mining plants existing as separate places not within organized boroughs.

A coal-mining plant necessitates a large outlay of capital, and involves great risks. The owners usually live many hundreds of miles from the works, which are operated by subordinate officers, superintendents and bosses, who live at the place. We are told that of every four companies organized three fail, hence, at first everything is done on as cheap a scale as possible.

The owners are men as good as those of other corporations, but being unfamiliar with the details of the work, and being occupied for the most part in securing contracts, they pay but little attention to how and in what manner their employees live. The president of a large coal company made in substance the following remark when his attention was called to the miserable conditions and surroundings of his employees: "They are no better and would live no better than swine, and there's no use to do anything for them."

I cannot believe this to be the general sentiment of coal companies, but there is, with few exceptions, a feeling of indifference, probably as I have said before, resulting from the want of familiarity with details. But it is not only in the darkness of the middle ages, or in that of a coal mine that we find "man's inhumanity to man," but in the brightness of the nineteenth century's civilization, we hear a railroad superintendent refusing to roof his docks, because "men are cheaper than shingles."

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*Read before the State Sanitary Convention at Lewisburg.

Owing to the uncertainty therefore of the enterprise being a financial success, economy is practiced in every way.

The *first* requisite for the mining of coal is men; the *second*, places for them to live. Men can easily be obtained by advertising. They come in abundance at their own expense. Not so with houses. They require an outlay both of capital and time. They are built in blocks, each block containing two houses, close together, sometimes only ten feet apart, usually thirty or forty feet. The foundation is made of posts twelve to fifteen inches in diameter set two or three feet in the ground and extending from six inches to as many feet above it. The material used for the house is rough unseasoned hemlock. The outside wall, floors, and partitions are of inch boards, two layers. The outside joints are covered by battens. A better class of blocks is plastered with two coats, and has hemlock flooring. Single houses are sometimes built. They are of the same classes as those just described. The plans of construction are many; a house, half a block, or a single house has four rooms. Some have in addition a kitchen, thus making a fifth room. They are two stories high, though I have seen many only a story and a half. The height of the ceilings is eight feet. The size of the rooms is seldom over twelve by twelve feet, often less. They are roofed with shingles.

The water closets are made to accommodate two or four families, The following describes one accommodating four families: A hole is dug in the back yard eight feet square and four or five feet deep. Sometimes a casing is placed inside, oftener not. A house is built over it divided into four compartments. It is of double layer, one-inch hemlock boards. The partitions and floor are of single layer. As soon as the material dries, cracks are formed large enough to see through. A rough door without a lock, and an ordinary seat with two uncovered holes completes the interior. The roof is of boards or shingles. When the hole is filled the house is placed over another similar one dug near by, and dirt is thrown over the one just uncovered. I need not stop to show this intelligent audience that such a closet is unsanitary.

The supply of water is usually obtained from springs. Sometimes wells are used, but if so, the pumps are broken so much of the time that most of the water is obtained as above stated or from holes dug in the ground. Sometimes a single deep well is dug, the water is pumped to a tank and distributed to the people by piping it to certain points where it is held in boxes. In these, people dip all kinds of pails and pots, children wash their feet and throw refuse and animals.

Dogs, cats and cows therein quench their thirst, and ducks and geese obtain their morning bath.

I had a chemist examine samples of

this kind of water on several occasions. He always found an abundance of organic matter. Thus good water is ruined by the plan of distribution. When water from springs and shallow wells is used it is only a matter of time until it becomes contaminated by surface water or by drainage into it from the water closets. Analysis shows this. It is also made manifest by observing the large increase in the amount of sickness after a plant has been established three or four years, the diseases prevalent being preventable ones. I have on many occasions traced an epidemic to its origin in a spring or other source of water supply.

The people composing mining towns are of several nationalities: Scotch, English, Welsh, Irish, Swedish, Italian and Hungarian form the majority. The first four—Scotch, English, Welsh and Irish—are generally English speaking, and have families. The last two, Italian and Hungarian are not, do not learn English well, and are usually without families. The Swedish people soon learn to speak English and generally have families. They do not continue in this occupation long as a rule. They soon save money enough to buy a piece of land and then devote themselves to agriculture.

The habits of the English speaking people are not very cleanly, though I am glad to say there are many excellent exceptions. They do not keep the houses or the yards as clean as they might. They do not bathe themselves or their children sufficiently often or well. They throw garbage and refuse into the yard instead of the stove. They throw slops, dish-water, wash-water, etc., out of the kitchen door instead of into the water closet. The wives do not exercise sufficient care as to the dress and habits of their children and themselves. They visit too much during times of epidemics. Other unsanitary things could be mentioned, but it is not necessary. The daily life of a household is about as follows: Rise at five o'clock, breakfast for husband and the older members of the family and putting up of the buckets (lunch we would call it) for those going to the mines; they remain there until four, five or six o'clock, P. M.; washing and dressing the smaller children, breakfast for them; clearing of the table and washing the dishes; this can all be done by eight or nine o'clock. At noon a meal is prepared called dinner. It is really only a lunch. At five or six o'clock, after the husband's return from work, they have supper, which is the heartiest meal of the day. Allowing two hours for the preparation of this meal, there are seven hours in each day for the especial duties of the wife.

Families number from four to ten children, born at intervals of about eighteen months. Husbands do little else than dig coal. After their day's work they wash, eat supper, and sit about smoking and talking until bedtime. The wives attend to the marketing, carrying the water, doing the chores, and all household duties. It is readily seen that more than an equal share of burdens falls upon the wife and we must be charitable in our criticisms. She cannot accomplish everything and do it perfectly, especially if she has a large family. But when we remember that with a family of five she has at least one old enough to help her, we are convinced that she could do better than she does if she spent less time in gossip with her neighbors, or at the store, and had more method in her work. There is a kind of indifferent, put-off-for-to-morrow habit that is responsible for much that is unhygienic in and about the homes. Then too, very little, if any encouragement is given the people to improve their premises and condition, which fact has its bad effect upon *any* class of people. That they are willing and capable is demonstrated by many whose persons and houses are as neat and clean, and whose children are as tidy as any in the land, notwithstanding the discouragements and indifference surrounding them. It is also shown by the improvement in and about all households when help and encouragement are given them by their employers.

The foreign speaking people, Italians and Hungarians, live in a terribly filthy state. One would say to look at them and their houses—many of them live in shanties one story high, having but one or two rooms—that water and soap had seldom been used on either. Very few have beds; some have bunks made of rough lumber and filled with straw. Others, the majority, own a single mattress or a comfortable or two, which they put on the floor and on which they sleep. When retiring they do not change their garments for those worn only at night, but wear the same suit that they wear in day-time after returning from the mines. There is nothing sanitary in any of their surroundings, and one can be pardoned for thinking that but little can be done for such persons. They know how to obey the boss and they fear discharge, and in that way we compel them to do better and to obey the rules.

Their food is in keeping with their surroundings.

The English-speaking people have *good* food and plenty of it. The best the market affords goes on the table and the store bill is always large. I have frequently seen the supper table of a miner contain a greater variety than did my own, and foods of as good a quality.

The cooking is poor. Dishes are not prepared on scientific principles. They know nothing of the chemistry of cooking. But I am convinced that they make no more mistakes in this line, than do more intelligent people, and they do not suffer as much from diseases consequent therefrom.

I have not attempted to describe *all* the things bearing on this subject. Location, atmosphere, the kind of labor and the conditions under which it is prosecuted, clothing, fuel, ventilation, manner of heating houses, education, foods, drinks are some of the additional questions that have a bearing on it, but this is not the time for their consideration.

But having looked at the relation of the companies toward their employees, the kind of houses, water supply and closets provided, and having briefly viewed some of the habits, modes of living and cooking of the people themselves, we are convinced that there is even here an abundant opportunity for hygienic experiment.

The officers of the Rochester and Pittsburgh Coal and Iron Company cognizant of the unsanitary condition of their older plants, filled with a desire to improve these surroundings as far as possible and to prevent them in the new works, and firmly believing that much would be done by the people under proper encouragement, organized a Board of Health, and adopted certain plans of reform. So far as I know, such a work has not heretofore been undertaken, at least in this State, and the Rochester and Pittsburgh Coal and Iron Company deserves great credit for being the first to make the attempt. I do not claim that their system is perfect, but that it is as nearly so as is possible at a reasonable expense, and that it is a great improvement over the old ways.

The Board of Health of this company consists of the general manager, who is president of the Board, the assistant general manager, the superintendents, the chemist, the engineer and the physicians in charge of the several works. It meets monthly and acts in harmony with the State Board.

The new town of Adrian is laid out in squares of equal size, around each of which are built eight blocks, sixteen houses, having a hundred feet or more between them every way. In the centre of each quare is placed a hydrant and a short distance from this are built the water closets. At the rear of each lot is built the coal-house. In most mining towns this is at the front of the house, on the street. Each house is plastered and has four rooms. Two are twelve by sixteen feet and two are twelve by twelve feet.

The water closets are built near the centre of the square, as before stated, and are constructed as follows:

A pit sixteen feet long, eight feet wide and ten feet deep is dug. In the bottom of this, three holes are bored six feet deep and a shot of dynamite is discharged in each. This loosens the bottom and allows fluids to drain away through the porous rock below. This pit is cased with three inch plank well spiked to a heavy frame-work and cannot cave in. A stone wall surrounds it, extending a foot above the surface and two and a half feet below it. On this wall is built a neat house, divided longitudinally into two sections, between which is a space six inches wide for ventilation of the pit below. Each section is divided into four compartments, each four feet square and made perfectly tight with matched flooring. The floor slopes toward the door. The front of the seat extends two inches below the floor, and has a groove, one-fourth of an inch deep on its front side into which the floor fits. One half of the top of the seat is permanent, the other is covered by two lids so that both can be raised, showing a space two feet by fifteen inches, through which slops are to be poured. All the lids are so hinged, that if raised and let go, they close themselves. In this way, odors from below cannot enter the compartment by reason of the neglect of an occupant to drop the lid. Each compartment has a number corresponding to that of the house, and is furnished with a good door and lock. Two upright ventilators, extending three feet above the roof and having an open top, and two gable ventilators are placed in each building. An ash box and a shovel are placed in each compartment, and the rules provide that the family using it must sift their coal ashes and put the fine ones in this box. They are to be thrown into the closet by each person using it. The sanitary inspector sees that this rule is obeyed.

I readily admit that this closet may not be perfectly sanitary, yet it is *nearly* so, and avoids the annual expense of the Rochdale system, which is a heavy one to a mining company, in as much as they have no use for fertilizers.

This closet is estimated to last fifteen years, and when filled, the contents can be dug out and hauled away. The closet can then be used again.

If a closet is needed in a wet place, so that a pit will not keep dry, the Rochdale system is used.

The water supply is obtained from a well five hundred feet deep, cased to the bottom. It is pumped to a large tank, built within a house which is kept locked, so that the water cannot be tampered with. It is piped from here to the hydrants. In this way the water is kept pure until its delivery to the consumer. It cannot be contaminated by surface or deep drainage.

Garbage and general refuse is disposed of by placing it upon a platform adjacent to the coal house and covering it with the coarse ashes. This accumulation is removed as often as ordered by the sanitary inspector.

Thus, the employees are provided with good houses, good water closets, a convenient place for disposal of garbage and a good water supply in great abundance. No advance has been made in the rent of houses; the company has cheerfully borne the entire expense of the improvements.

Certain rules have been adopted by the Board of Health, relative to cleanliness of houses and yards, care of closets, disposal of garbage, general refuse, slops, wash-water and dish-water, disinfection and quarantine during epidemics and other kindred subjects, which it is not necessary to read here.

One of the most difficult troubles to overcome in a mining town, is that of crowding. Too many persons will live in the same house. At one time, I remember finding twenty-one people, men, women and children, living in five rooms. At another, I found fifteen living in three rooms and five of them ill with diphtheria. It is no uncommon thing to find a family of three, four or even five living in one room. I am glad to say that such crowding as this cannot occur in any of our towns. Perfection in this particular, is beyond expectation, though the rules control it to a great extent and are vigorously enforced. If people will not remove to larger quarters, they must remove from the place.

A sanitary inspector has been employed, whose sole duty is to go from place to place and to see that the rules are obeyed. All violations are reported. The people are remonstrated with and urged to do what is right. If they persistently disobey the rules, they are permanently discharged.

The undertaking is a great one. Perfection can scarcely be hoped for. It works well thus far. The people are quite enthusiastic, and give great promise of harmonious and cheerful obedience. Already the places show a greatly improved appearance.

Should the ends in view be only reached after long and hard work, or should they never be quite reached at all, some success will be attained. This will be sufficient to induce other companies to adopt reform measures, and the result will be the prevention of a great amount of sickness, as well as the saving of hundreds of human lives.

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EDITORIAL.

DOES THE SHOE FIT ANY OF OUR SUBSCRIBERS?

An Exchange relates this parable: "A revivalist requested all in the congregation who paid their debts to rise. The rising was general. After they had taken their seats, a call was made for those who did not pay their debts, and one solitary individual arose and explained that he was an editor and could not pay because all the rest of the congregation were owing him their subscription to his paper."

WHO DISCOVERED THE COMMA-BACILLUS?

In the year 1854, just thirty-four years ago this month, the City of Lancaster, in this State, passed through quite a severe epidemic of cholera. In the year 1855, a report on this epidemic was made to "The Sanitary Committee of Lancaster County," by the distinguished Dr. John L. Atlee, late President of the American Medical Association. This report was composed partly by his son, Dr. Walter F. Atlee, now the eminent physician of this city. This report concludes as follows:

"Much has been written upon this subject, both by contagionists and those advocating the theory of atmospheric or telluric influences, as epidemic causes. It is not my object to enter into this discussion. One fact, however, may be mentioned, which I would recommend to the attention of future observers. During the existence of cholera at the hospital, several portions of the *rice-water discharges, both from the stomach and bowels, and from different patients, were carefully examined by a powerful microscope, magnifying about seven hundred diameters, and in all of them were discovered extremely minute bodies, differing in appearance from epithelial cells, and from the known physiological and pathological, histogenic and phytogenic elements.* An accurate drawing of them was made and exhibited to Prof. Jackson, of the University of Pennsylvania, and we regret that we cannot at this time append a copy of the drawing to this report."

It must be stated that after graduating in medicine at the University of Pennsylvania, Dr. Walter F. Atlee had pursued his studies in minute anatomy for years, in Europe, under Charles Robin, and also under Lackerbauer, the celebrated designer of microscopical drawings, so that he was thoroughly competent to discover what the microscope revealed, and to accurately delineate and describe that which he saw. When, thirty years later, Dr. Shakespeare, upon his return from India, addressed the College of Physicians of Philadelphia upon Koch's discoveries, exhibiting the comma-bacillus under the microscope, Dr. Atlee, after inspecting it, remarked to Professor Da Costa, who stood near by, that this was identically the same organism that he had seen in Lancaster in 1854. We regret that we cannot reproduce the drawings, that were treated so lightly by Professor Jackson, but we have every reason to believe that "*the extremely minute body*" and the bacillus of Koch are identical in appearance. It would thus seem that the peculiar minute body seen in cholera excretions, the discovery of which, at a time when rtain theory is in vogue, has made the German famous throughout the civilized world, had been described and figured in this country many years ago.

We would refer any of our readers, who might wish to see the full report, which is of very great interest; and, so far as it relates to the contagiousness of cholera, of the highest importance, to the transactions of the Medical Society of the State of Pennsylvania for the year 1855.

Dr. Jackson did not believe that any schizomycete could be the cause of cholera, nor did Dr. Atlee, nor does he believe so now. He believes that the specific disease, cholera, produces a change in the tissues and humours, and this change allows of the development of these microscopical bodies of a peculiar kind. Every living thing requires certain conditions for the development of its germ, *but it is not the cause of these conditions.* So far, no convincing proof of the germ theory of disease, as applied to *living tissues and living phenomena* has been produced, says Dr. Atlee.

NOTES AND COMMENTS.

THE CAMP CURE.

A few years ago public attention was directed to this subject by an article in the secular press, written by one of Philadelphia's most eminent physicians.

To this and similar publications is to be attributed the multiplication of "health resorts" which has occurred during recent years.

Sufficient time has elapsed (says the *Medical Times*) since the camp cure came into vogue to allow an opinion as to its worth. As a means of treating incipient disorders of the nervous system its value is very great; as a preventive it is still greater. In many cases of confirmed nervous disorders, we are convinced that better results can be obtained from it than from any other method of treatment. In all the great groups of diseases which have their true foundation in the overwork necessitated by modern life, there is no other remedy to compete with this. A thoughtful man remarks that consumption is but another name for death—death prolonged over a longer period than usual—but really a gradual extinction of vitality. In many other cases the same thing may be said. The soil is exhausted.

But in many instances the camp cure fails because it is not taken in sufficient doses. The patient returns after a week or two, refreshed, relieved, but in a short time his symptoms return. It is a remarkable fact that the Mosaic institutions contain much that to our eyes seems better fitted for modern times than for those in which these laws were promulgated. We know that there is a good reason for the avoidance of pork ; a reason which could not have been known then. We have found that the observance of the Sabbath as a day of rest is necessary to the health, and that more and better work can be done in the remaining six days if the Sabbath be kept, not religiously, but physiologically. But surely Moses must have had in his mind, not the pastoral Hebrews of his day, but the brain-workers of our epoch, when he instituted the Sabbatical Year, one year of rest in seven. Here we have the wisest of remedies. Instead of a week or two, which simply gives renewed strength for the time being, we have here a means of counteracting the effects of persistent overwork. One could afford to throw his whole energies into his work without fear of injury, if every seventh year he were to return to a state of nature, and allow his mind to lie fallow. This period would allow time for reparative processes to be completed. Too often the vacation is only sufficient to interrupt the processes of disease, not allowing time for full restoration to health.

The interruption to one's business is the great obstacle to the adoption of such a plan ; and herein also is shown the wisdom of the Mosaic system, for, being enforced by a general legislative enactment, applicable to the entire nation, business accomodated itself to the interruption, as it does now to the Sabbath. While it is not possible to make such an arrangement now, still there are many individual cases in which the advice of the physician can induce patients to take a period of rest sufficient in kind and in extent to accomplish lasting curative results.

THE ORIGIN OF DIPHTHERIA FROM BIRDS.—It has been known for some years that birds and poultry are subject to a disease which corresponds to what in the human being is known as diphtheria. Several foreign observers have gone a step further, and have endeavored to show that the disease is capable of transmission to human beings. Last year Dr. Turner drew up an interesting report for the Local Government Board, bearing on this alleged transmissibility, and he adduced a large number of observations which seemed to indicate a connection between a diphtheritic affection, not only in fowls, but in rabbits and cats, and a similar affection in man. The report comprised several instances in which the "strangles" in horses appeared to give rise to a like train of symptoms. In a thesis by Dr. Menzies, the transmission of the disease from animals to man is attributed to the dejections of the former. Diphtheritic affections among fowls are very common in Italy, and he quotes an instance in which four out of the five children of a medical man were attacked and died. In this case he incriminates the thatched roof, which was inhabited by colonies of fowls, geese, pigeons, etc. The dejections of these animals, washed off by the rain, found their way into the cistern or well from which the supply of drinking-water was drawn.—*Medical Press and Circular.*

ASPHALTE PAVEMENTS AND THE PUBLIC HEATH.—The vapor of tar has been supposed to be beneficial in a number of disorders, but Dr. Edmund J. Mills, of the Glasgow Technical College, has written a short note on the injurious effects of tar vapors so copiously discharged on our streets while asphalte road-mending is going on. It is said that the injurious effects of these fumes is perfectly well known at tar works, where the pitch is always cooled down in a closed chamber prior to casting in blocks. Casual inquiries have convinced him that the operations of road repair in Glasgow have been, during the last three weeks, the cause of a great deal of totally unnecessary illness, the leading symptoms of which are nausea and giddiness. He himself has been three times prostrated in this way, and has been thereby debarred from pursuing his ordinary professional work until these repairs cease. In view of the serious inconvenience from which many more must have suffered, it is to be hoped that the use of pitch in the future may be dispensed with, as the operation of road-mending can, if desired, be conducted without any offense whatever to the public health.—*British Medical Journal*, May, 12, 1888.

DANGEROUS LEMONADE.—A style of lemon squeezer has been recently sold quite extensively which is made of galvanized iron, or iron covered with a coating of zinc. A word of caution should be given against the use of such articles, as the citric acid of the lemon will readily dissolve the zinc, forming unwholesome and poisonous salts. Lemon squeezers should be made either of iron or wood, or, better, like some we have observed, where the surfaces brought into contact with the fruit are of glass or porcelain. Zinc is a metal which is readily attacked by the weakest acids, and no article of food or drink should ever be allowed to come in contact with it.

A TOWN DEPOPULATED BY A FEVER.—Private information has been received in this city to the effect that Plant City, South Florida, where yellow fever is reported as existing, has been entirely depopulated, with the exception of two or three persons, who are unable to be removed, and a few attendants. The people who have been sent away are stationed about in the neighboring country. It is stated also, on authentic authority, that the buildings, furniture, bedding, etc., will all be entirely consumed by fire in order to effectually destroy any germs of disease that may remain in them. A strict cordon is also kept up about the city and vicinity night and day, and is to be continued till frost comes in order to prevent any persons from going into other sections of the State.

MARY ANDERSON BELIEVES IN EXERCISE.—Mary Anderson finds boating on the Thames a great relaxation after hard theatrical work. She will row for miles at a stretch, and is as fresh at the finish as at the start. She dresses for this exercise in a blue flannel dress intersected with knife-pleating of white, with lines of gold braid, sailor blouse bodies and shirt, and white straw sailor hat with wide ribbon band and upright bunch of loops. No corset, tournure or draggling skirts interfere with work.

LEMON WHEY.—Take a pint of milk and water, the juice of two lemons, and let the mixture boil for five minutes; strain and add sugar to to taste; or

One pint of boiling milk, half a pint of lemon juice, sugar to taste. Mix and strain.

GENERAL SANITARY WORK IN ILLINOIS.—From the report of the Secretary of the State Board of Health we learn that, with but slight exceptions, the general health of the State has been satisfactory. A good amount of sanitary work has been accomplished, a number of cities and towns having completed their re-inspections and others having begun this work for the first time. Galesburg, Cairo and Sparta are to be specially commended for the thoroughness of their work in this connection.

The circular of the Board addressed to railway managers in April last has met with a very gratifying reception. Many roads have entirely reformed the sanitary conditions with respect to the accommodations for passengers at stations; vaults have been emptied, disinfected and the contents disposed of so as to avoid future nuisance; and arrangements are now secured for keeping these appurtenances in a cleanly and comfortable condition. Much attention has also been given to the purity of the drinking water furnished at the stations and on the trains.

Work on the investigation of the water supplies of the State has been impeded to some extent by the high stage of water in many of the streams, and lately by the excessive rainfall over large areas. Considerable progress, however, has been made. Time tables for the collection of water supplies at various points—23 in number—between Chicago and Alton have been constructed, so as to make it practicable to follow the changes, by pollution and purification, in a given body of water from the time it leaves Lake Michigan until it flows past the City of Alton. Reports of the chemical and biological examinations are received in the Secretary's office.

Except with the interruptions noted, samples of water are now collected and examined once a week at Chicago (lake water), Bridgeport, Lockport, Joliet (above and below city), Morris, La Salle, Henry, Peoria, Pekin, Copperas Creek Dam, Havana, Beardstown, Peason and Grafton, on the main stream; and from the Kankakee, Du Page, Fox, Big Vermilion and Little Vermilion, Sagamon and Spoon tributaries. Samples will also be taken from Alton and East St. Louis (Mississippi river water), and from other points as found necessary in the course of the work, which will continue six months or more.

In each sample the following determinations are made: Total solids, suspended matter, nitrates and nitrites, chlorine, hardness, free ammonia, albuminoid ammonia, oxygen consumption, and color and odor. By continuing the work through so long a period, and by making the analyses as fully as outlined, it is hoped that the effect of accidental variations will be practically eliminated. The amount of flow from some of the tributaries is pretty well known, and before the end of the summer it will be known for all, so that we will then be in possession of data complete enough to enable us to give a fair answer to the question, what is the rate of oxidation in the Illinois river in a flow of 400 miles, with sources and amount of contamination, and amount of dilution from tributaries, practically known.

The results obtained thus far in this investigation show the importance of a study of tributaries. The waters of some of these appear to contain a great deal of decaying vegetable matter. The character of these waters will be thoroughly studied, as an understanding of them is of the highest importance to the sanitary welfare of the communities supplied from such sources. The public water supplies of some of the cities and towns are also being investigated.

The investigation of the underground water supplies is making satisfactory progress—records from some 60 different localities, in all parts of the State, having been already secured.

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House Plants as Sanitary Agents.—In a popular lecture on House Plants as Sanitary Agents, before the students and friends of the Medico-Chirurgical College, delivered some time since, Dr. J. M. Anders said: "that notwithstanding the fact, that many of our most valuable medicinal remedies were long ago extracted from vegetable life, yet growing plants, more particularly when cultivated indoors, had not, prior to the last decade, been regarded as possessing any sanitary advantages, and, when kept in the sick chamber or sleeping rooms, they became positively hurtful.

Our ancestors held the motion that plants exercise injurious effects because they give to the air carbonic acid at night and take from the air oxygen during the same time, but it has been shown conclusively by experiment that the amount of these gaseous bodies either given to or taken from the atmosphere is too small to have any appreciable effect, even when the plants are kept in living and sleeping rooms. Hence there are no valid objections to the practice of keeping flowers right in the home circle. On the other hand, house-plants have a decidedly beneficial influence on the atmosphere of the home. The lecturer pointed out the power of growing plants and flowers to relax tension of mind, as well as to give the feeling of companionship.

But the most important sanitary effects of which plants are capable are due to two functions, viz., transpiration and their ozone-producing powers.

The first of these functions is important, owing to the fact that the moist vapors which plants emit from their leaves increase the degree of saturation of the surrounding air, and especially significant is this office on the part of plants when we reflect that the air of our dwellings is constantly much too dry to be healthy.

The fact that the plants generate ozone is also of the utmost importance from a sanitary point of view, since ozone is regarded by leading scientists as the one great and natural purifier of the atmosphere which constantly surrounds us, and which we are ever called upon to take into our lungs.

The lecturer gave an interesting array of practical data tending to show the efficacy of growing plants to prevent consumption of the lungs. The method advised was to stock the living and sleeping apartments with plants and flowers in winter and to live among plants out-of-doors in summer. This he termed a "Home Sanitarium," and pointed out its advantages over the reputed mountain and seaside resorts. Of course, the rooms must be of good size, and should have a southern exposure.

COMPENSATION OF HEALTH OFFICERS IN MICHIGAN.

(The following interesting matter is from the report of the Michigan State Board of Health): A postal card with printed questions was sent by the Michigan State Board of Health to each of 1,055 health officers of townships, 213 health officers of villages, 48 health officers of cities (in all, 1,316 localities) asking for information concerning the compensation of health officers, work performed by them, etc. Replies have been received from 551 townships, 104 villages and 20 cities, —in all 675 localities.

According to the reports, provision is made for an *annual salary* in 111 townships, 54 villages and 18 cities. The annual salaries provided for average $16.93 for each township, $128.33 for each city, and $26.21 for each village.

In 13 townships compensation was allowed by the day: in nine of them, $2.00; in three, $1.00; in one, $1.50. (A general law, Act 137 Laws of 1883, provides for not less than two dollars per day). In one township it is reported that the health officer is paid 75 cents per visit.

Charges for services rendered, including salaries, were made in 467 localities: an average of $11.60 for each of 389 townships; in 17 cities, an average of $137.00 for each city; and in 61 villages, an average of $22.00 for each village. In 196 localities, no charges were made for services; and in 12 localities, where charges were made, the amount was either not allowed, or is in process of settlement.

Compensation for health officers was allowed and paid in 455 localities as follows: In 376 townships an average for each township of $11.17; in 18 cities an average of $132.33; in 61 villages an average of $19.19.

In response to the question "How much, in your judgment, should the health officer in your jurisdiction receive for the full and thorough discharge of his duties under the law?" replies were received from 344 townships, stating an average of $37.29 for each township; from 19 cities, estimated amounts, averaging $331.58 for each city; from 76 villages, an average of $81.12 for each village.

From the foregoing statement it will be seen that the amount of compensation allowed to health officers for their services during the year 1887, was for health officers of townships, less than one-third, for health officers of cities, a little more than one-third, and for health officers of villages not quite one-fourth, the amount they consider a proper compensation.

In reply to the same question, relative to mode of compensation, 72 health officers stated that proper compensation should be a certain sum per day for actual service,—the amounts stated averaging $2.19 per day. One said $3.00 per visit, and one, fifty cents per hour. Forty-six health officers made replies like the following: "According to work performed," "according to circumstances," "all he earns," "regular fees," "same rate as physician," etc.

HOW WELL DOES PUBLIC OPINION SUSTAIN PUBLIC-HEALTH WORK?

A large majority—444 of the 593 health officers of Michigan stated that they were well sustained; 151 said that they were poorly sustained, and 36 stated that public opinion did not sustain them at all.

SERVICES RENDERED BY THE HEALTH OFFICERS.

Replies to the question as to services rendered by the health officer were received from 593 localities. The number of nuisances inspected in all the localities reported was 5.075; the number abated was 3.679. The number of reports made to the State Board of Health was 4,029, and the number of communicable diseases looked after was 5,389. The above numbers do not fully show the amount of service peformed, because many health officers stated that they had inspected and abated nuisances, sent reports to the State Board of Health, and looked after cases of communicable diseases, but had kept no record in either case; therefore the foregoing numerical statements of work performed are too small; and they represent only 593 out of the 1,404 localities in the State. It is possible that the most active and reliable health officers made reports on this subject, and if so it would not be safe to assume that those not heard from performed services in the same proportion as did those who reported. However, the health officers of some cities, who make regular reports to the State Board, failed to respond to this circular. The health officers of the two largest cities in the State—Detroit and Grand Rapids—did not respond; neither did the health officers of the following cities: Alpena, Battle Creek, Charlotte, Dowagiac, Eaton Rapids, East Saginaw, Escanaba, Grand Haven, Greenville, Ionia, Manistee, Marquette, Mason, Marshall, Menominee, Monroe, Mt. Clemens, Muskegon, Niles, Owosso, Port Huron, Saginaw City, St. Clair, Stanton, West Bay City, Wyandotte, Ypsilanti.

If all the 1,494 health officers in Michigan performed services in the same proportion as did the 593 who reported, then there were over nine thousand (9,263) nuisances abated, and over thirteen thousand (13,595) cases of dangerous communicable diseases looked after with the view of restricting their spread in Michigan during the year 1887.

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EXERCISE IN THE TREATMENT OF CONSUMPTION.—Dr. John Ridlon thus writes in the *Medical Record*: I beg leave, then, to suggest the following exercises, to be given daily, for from three to six months, in a large, sunny, well-ventilated room, *by the physician himself*, who must regulate, according to the condition of his patient, the duration of each exercise and the rests between, and must see to it that they are not carried to the point of fatigue. When the patient has gained sufficient strength to make exercise with resistance desirable, the physician must himself give that resistance, and no more delegate it to a nurse or a servant than he would the treatment of a hernia or a case of spinal curvature. When it is possible, it is a convenience to have a special table for the patient to rest upon; one about 34 inches high by 72 inches long and 12 inches broad will be found useful. This should be only moderately well-padded, and the head should *not* be supported upon a pillow. All clothing should be loose.

1st *Exercise.*—Lying, shoulder tips well down, hands supine with little fingers close to legs, breathe deeply, in through the mouth and out through the nose.

2d *Exercise.*—Lying, hands stretched upward, arms parallel at the sides of the head ; breathe as above.

3th *Exercise.*—In first position, flex and extend the toes, flex and extend the feet, abduct and adduct the feet.

4th *Exercise.*—Flex the legs on the thighs and the thighs on the pelvis, and extend the same.

5th *Exercise.*—Circumduct the legs, with the knees, ankles, and toes extended and held rigid.

6th *Exercise.*—In the second position, flex and extend the fingers, separate and bring together the same ; flex and extend the hands, abduct and adduct the hands.

7th *Exercise.*—In the third position, flex the forearms on the arms and the arms on the trunk (bringing the elbows down at the sides and the palms forward) ; extend the same.

8th *Exercise.*—In the first position, circumduct the arms, upward (being parallel) backward, outward and downward to the first position, the elbows, wrists, and fingers being extended and rigid.

9th *Exercise.*—In the second position rotate the head, twisting the neck on the long axis of the body.

10th *Exercise.*—In the third position grasp a stick with the hands about eight inches apart, and carry it forward and downward to the thighs, then upward.

11th *Exercise.*—Backward bending while the physician lifts the head with locked hands.

12th *Exercise.*—Patient lying prone, circumduct the legs, outward, inward and downward.

13 *Exercise.*—Same position, the legs being held down by the physician, the patient slowly raises the head and shoulders from the table ; the hands may rest on the hips, or at the back of the head, or be stretched upward, according to the strength of the patient.

When sufficient strength has been gained, No. 12 may be taken with the head and shoulders extending beyond the end of the table. Also let the patient, while lying on his back, flex the legs over the end of the table, and while they are held in that position by the physician, or locked around the legs of the table, flex the trunk on the thighs to the sitting position and then slowly let himself down again to the lying position. When the patient is still stronger he may lie prone, with the body above the hips extending beyond the end of the table, and, the legs being held down, he flexes the body downward, and raises it as high as possible, with the hands as in No. 14.

That these exercises should not all be given at once would seem to be self-evident. The following is appended as a good prescription to commence with :

Number 1, five times.
" 4, three times.
" 2, five times.
" 7, three times.
" 3, five times.
" 9, two times.
" 1, three times.
" 5, two times for each leg.
" 8, two times.

Then let the patient rest for some time in the second and third positions. Ordinarily the rests are made in the first position. Care should be taken that each exercise be done vigorously but slowly. Let there be no throwing about of the arms and no shiftlessness. One movement properly executed is of more value than all carelessly performed.

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WEAR AND TEAR OF THE PROFESSION.—From the *Jour. Am. Med. Ass.* we learn that Dr. John H. Rauch has recently published some statistics on this subject, collected during the last ten years. The figures go to show that the wear and tear on the medical profession is underestimated, and that the active practice of medicine is less conducive to longevity than is popularly supposed.

The statistics are based on observation in Illinois, in which, during the last ten years, there has been an average of 6,000 living per annum, and the aggregate deaths have been about 800—an annual mortality of 13.3 per 1,000. The *personnel* of the profession in Illinois is thought to be fairly representative of the profession generally, since it is composed of about one-sixth of physicians of a large city, and the remainder of physicians of smaller cites and towns.

Of the 800 deaths the age at death and the cause of death have been obtained in 686 cases. Three tables have been prepared, the first showing the average number of physicians in Illinois living annually at grouped ages, and of all the males in Illinois at the same ages; average number of deaths annually of each class, 1878 to 1887, inclusive. The second table shows the yearly death-rates per 1,000 of physicians in Illinois, of all males in Illinois, and of both sexes in the United States, at grouped ages. From an examination of the tables it is seen that, while the death-rate of physicians in Illinois for the first few years after entering the profession is lower than that of all males in Illinois, and greatly less than that of the whole population of the country; it increases beyond that of the former class during the decade from 40 to 50, and is greater than that of the latter class in the next decade. The inference to be drawn from this is that on entering the profession physicians form a selected class, since they have an advantage of almost 3 per cent. as compared with all males at the same ages—from 24 to 40—and of more than 50 per cent. as compared with the total population, both sexes, at the same ages But as the wear and tear of practice begins to tell this advantage is soon lost, and during the four decades from 30 to 70 the mortality of physicians is 8 per cent. greater than that of all males, and during the period from 40 to 70 it is 11 per cent. greater than that of both sexes.

The third table shows the principal causes of deaths of physician in Illinois during the ten years ending December 31, 1887. The following are the percentages: Phthisis 15.3, diseases of the lungs and respiratory apparatus 14.4, diseases of the brain and nervous system 13.1, zymotic diseases 10, misadventure and violence 9.4, diseases of the heart and blood-vessels 8.4, diseases of the stomach and digestive tract 6, Bright's disease 3.8, diseases of the liver and appendages 3.2, and enteric fever 3 per cent. These figures show the result of exposure, irregular hours, broken rest and mental anxiety. Phthisis, diseases of the respiratory apparatus (91 deaths from pneumonia), and Bright's disease caused 268 deaths—more than 25 per cent. of the total. It is seen that more than 13 per cent. died of diseases of the brain and nervous system (embracing 43 cases of the various forms of paralysis) as a result of mental strain and anxiety, insufficient, irregular, and interrupted sleep and similar causes. The group of zymotic diseases includes 5 deaths from diphtheria, 1 each from smallpox and yellow fever, and 8 from septic infection, contracted while in attendance upon patients.

There is a marked decrease during late years of the deaths from alcoholism, overdoses of opiates and narcotics, and suicide, possibly due to an amelioration of the conditions of life—better roads, better means of locomotion, increased comfort in living, and less strain upon the practitioner, particularly upon the country doctor. During the last ten years 12 deaths are reported as due to alcoholism, but 11 of these occurred during the first six years of the decade; of the 18 deaths from "overdoses of opiates and hypnotics" in the whole period, there has been but one during the past three years.

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GARBAGE CREMATION.—We answer a correspondent, who writes to us on this subject, by the following extract from the *Sanitary Era:* "The Chicago garbage crematory is reported in successful operation, burning about fifty tons of garbage per day—all that is offered to it. It has a capacity of 150 tons per day, but at present it does not receive enough to warrant running it at more than a third of its capacity. Assistant Commissioner of Health Thompson's report under date of May 1 says:

"The dimensions of the garbage furnace proper are: Length, 69 feet; width, 18 feet and 8 inches: height, 21 feet. At the extreme ends of the furnace the fire is made which passes under the grate upon which the garbage is thrown. There are three, one large, and two small furnaces, for burning garbage, and midway between them is located the smokestack, which is 42 inches in diameter inside and 90 feet high. There are three tiers of doors opening into the crematory. The upper one is for receiving the garbage, the middle one for stirring the material, the lower or bottom tier for taking out the ashes and dèbris of the burned garbage. The whole structure is enclosed with a frame building ninety feet long, fifty-two feet wide, and twenty-eight and one-half feet high. The roof of the building is flush with the street, so that wagons may drive upon and discharge their loads into chutes which deposit the material upon an iron platform immediately in front of the doors, where a man stands to receive, separate, and feed the fire. Eight wagons can be unloaded at the same time.

The furnace is constructed on what is known as the Mann patent, and one now in successful operation in Montreal was used as the model. The Chicago furnace, however, has double the capacity of that in Montreal. Its cost was $11,287.60, but with experience gained in its construction, it could be duplicated at the proper season of the year for $9,000.

Running at a third of the full capacity a little over a ton a day of coal is used. I am confident that we can run the crematory at its full capacity with about five tons of coal per day."

THE GOAT *vs.* THE COW.—The *British Medical Journal* advocates a wider use of goat's milk, arguing that the cow's milk in cities is never free from the suspicion of infection or adulteration. The goat, on the other hand, does not have or very rarely has tuberculosis, is easily kept clean, and is a vigorous and healthy animal, thriving under almost any condition; and, lastly, the goat's milk itself, as is well known, is more easily digested by infants than cow's milk.

Taking everything into consideration, goat's milk might be provided at less cost than cow's milk. The chief advantage of the former lies in its ready assimilation by the digestive organs of the infant, owing to its relatively small proportion of casein, less than that of human, and much less than that of cow's milk.

SCHOOL HYGIENE.—The Report of the New York State Board of Health on the sanitary condition of the schools of the interior, exposes at large and in detail the usual glaring defects of country school houses, and makes important recommendations; especially as to foundations and walls; ample light on the left side and back of every pupil; 250 cubic feet air space, and thirty feet fresh air per minute, per capita; temperature maintained at 68 to 70 degrees; and closets for each sex, apart, with separate covered ways of access from the schoolhouse, privy vaults abolished and dry-earth closets substituted, and emptied once a week. The usual error of allowing ashes in the closets as an alternative to dry soil, is maintained; we had almost said as a matter of course. It cannot be too often repeated that sand and ashes are merely palliative, and totally inert for defecation (with the slight exception, in wood ashes, of some mineral salts) and that the carbon, and above all the bacteria, of rich soil, are the sovereign factors in any true system of defacation.

THE DECADENCE OF TYPHOID FEVER.—Typhoid Fever has, upon the whole, diminished both relatively and absolutely (says Dr. Henry P. Walcott). In 1886 the percentage of deaths from Typhoid Fever to deaths from all causes was 2.15; in the year of greatest prevalence, within a period of twenty years—1872—the percentage of deaths from Typhoid to deaths from all causes was 4.86 and the death-rate per 10,000 living was 11.1. The diminution in the death-rate from this disease has been especially marked in cities with new water-supplies and good systems of sewers. The death-rate from this cause is substantially unchanged in the small country-towns. The death-rates from Typhoid Fever per 10,000 living, in census years 1865—1885, have been for the State of Massachusetts; 1865, 13.4; 1870, 9.1; 1875, 6,4; 1880, 4.9; 1885, 3.9.

OVERDOING THE VACATION EXERCISE.—One of the doctors is warning summer vacationists, says the *St. Louis Globe-Democrat*, that their chief danger is going too fast. "The most common error at the start is overdoing." There is a walk of several miles on a mountain; or, if it is bathing in the sea, an hour is spent among the waves. "Degreeingly to grow into anything," says one of the old writers, "is reserved unto the wise men." He adds that any change that is made in our mode of life should be gradual. "The first exercise of any kind should never be to the extent of fatigue. As to bathing, it is to be remembered that man is not an aquatic animal." The trouble with those who seek a summer's rest is that they are carried away by the novelty of new situations and do not content themselves with peacefully enjoying anything. This is particularly so of the women."

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A GOOD MOVE RELATING TO POULTRY SELLING.—The State Legislature of Massachusetts has enacted the following: 1. No poultry, except it be alive, shall be sold or exposed for sale until it has been properly dressed, by the removal of the crop and entrails, when containing food. 2. Whoever knowingly sells or exposes for sale poultry contrary to the provisions of Section 1 of this Act, shall be punished by a fine of not less than five, nor more than fifty dollars for each offense. The Boards of Health in the several cities and towns shall cause the provisions of this Act to be enforced in their respective cities. It would have been better surely to have omitted the words, "when containing" in the first section. The entrails always contain either food or the excrete refuse of it, containing numberless microbes ready to set up putrefactive or diseased processes.—*Prophylactic.*

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SANITARY PROGRESS IN EL PASO.—El Paso, Texas, has a Health Officer, Dr. W. M. Yandell, who, to judge by the tone of a communication from him to the local paper, possesses the spirit and energy to accomplish a vast deal of valuable work. He is gradually, but rapidly causing all the citizens of El Paso to connect their premises with the sewers, for, although they have no law to this effect, yet they have a law against the maintenance of nuisances and since privy wells are nuisances, they can be abated, which leaves the sewer connection the only alternative; so that by his ingenuity, Dr. Yandell is able to accomplish that which he could not do directly by the application of law. We are especially gratified to hear Dr. Yandell says that he finds the poorer class fully alive to the benefits of well enforced sanitation.

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THE CESS-POOL; HOG-PEN AND BARN-YARD ARE RESPONSIBLE.—Another noteworthy fact (says Dr. C. A. Lindsley of Connecticut) is that in the towns of over 5,000 population the death rate is lower than in the towns of less inhabitants.

Can it be that the neglect of attention to the conditions about the homes of country residents makes the air about them impure as compared with the larger towns where better care is given to drainage and the prompt removal of sewage? How else does the benefit of out-door life in the urban towns seem greater than in the rural places? Do the cess-pools under the window, and the hog-pen and the barn-yard explain it?

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SEWER-GAS AND DISEASE.—At a recent meeting of the Medical Society of the County of Kings, Dr. J. H. Raymond, late Health Commissioner of Brooklyn, stated:

"During the prevalence of Typhoid Fever in that city in 1885, in almost every instance where a case of Typhoid Fever was found in a house, I think, without exception, there was a condition of plumbing which would account for the entrance of sewer-gas, so that if the air of that particular sewer was infected with Typhoid Fever, we could understand how it might find its way into the house, the sewer-air serving as a carrier of the germ."—*Sanitarian.*

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THE LOMB PRIZES FOR 1888.—A first prize of $500, and a second prize of $200 are offered for the best essay on the subject, "Practical Sanitary and Economic Cooking Adapted to Persons of Moderate and Small Means." The competition is open to all; but essays must be in the English language. All essays written for the above prizes must be in the hands of the Secretary, Dr. Irving A. Watson, Concord, N. H., on or before September 15, 1888. Each essay must bear a motto, and have accompanying it a securely-sealed envelope containing the author's name and address, with the same motto upon the outside of the envelope.

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A SANITARIAN TRIBE.—It is said of a Bengalese tribe, the Oswals of Marwar, that while cholera rages on all sides of them, not one has ever taken the disease, much less succumbed to it, and they attribute their immunity to their sanitary rules. According to the precepts of their religion, they never touch animal food, nor spirituous liquors; they dine early, and sup on milk and fruit. Wherever an Oswal goes, he never breaks these rules. It is not added, but it is quite safe to presume, that a measure, at least, of cleanliness goes with these other religio-sanitary ordinances.

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THE SOUTH AMERICAN SANITARY CONGRESS, which recently met at Lima, was held for the object of establishing an international sanitary system among the South American States, with a view of checking the development and spread of infectious diseases, especially Cholera and Yellow Fever, and including plague. The plan provides for intelligence offices in each country, from which information will be sent out. The time of quarantine in case of Cholera is to be 8 days, and 10 days in case of Yellow Fever. Ports are to be closed under no circumstances.

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MICHIGAN'S ACTIVE SECRETARY.—As we write (July 23) we have before us a *printed* abstract of the proceedings of the Michigan State Board of Health at a meeting held July 10. Such promptness, while characteristic of Dr. Baker, yet deserves special commendation. *Thirteen* days after the date of meeting the proceedings thereof are in print and scattered throughout the country. Such an example should be followed by all our Boards.

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DR. RAUCH'S MANAGEMENT OF SMALL-POX.—Although there have been 9 importations of *Small-pox* into the State during the year (says Dr. John H. Rauch, in his report to the Illinois State Board of Health), and the disease is prevalent in many surrounding localities, and especially among the negroes along the Mississippi and Ohio rivers, there has been no spread of the contagion in Illinois, and the outbreaks thus far have been promptly suppressed with only one exception.

Quince Cider.—A very pleasant beverage can be produced as follows: "Take a quantity of ripe quinces, and cut into quarters with the pips, etc., removed. Boil these in a copper vessel with double their weight of water; when boiled to perfect softness pour must the into a vat. To this add, to every fifty pints of must two pounds of sugar and half a pint of yeast, diluted in a sufficiency of hot water. Mix the whole well together and allow it to ferment. Then strain and bottle.

To Cool Water Without Ice.—Where ice cannot be procured, water may be cooled by wrapping the pitcher containing it in a towel of loose texture which has been previously impregnated with ammonium nitrate (*and dried*) and moistening this with water. The same towel may be used repeatedly, being dried thoroughly beforehand each time.

Local Health Boards in Minnesota.—By the terms of the law there should be 1504 Local Boards of Health in Minnesota. There are, at date, organized and at work, in mutual co-operation, and with the State Board, 1444 Local Boards of Health. The remainder are delayed by various causes, but will soon be in line.

A Sanitay Convention in Canada.—A sanitary convention and meeting of the Executive Association of Health Officers will be held, by invitation of the Mayor and Council, at Lindsay, on Tuesday, Wednesday and Thursday, August 14, 15 and 16, 1888.

Vital Statistics in Illinois.—The report of the meeting of the Illinois State Board of Health, held on April 19 and 20, says: For the first time since the collection of vital statistics was begun all the counties have made returns of births and deaths. These, which are for the year of 1887, show a general improvement and increased fullness. A total of 32,164 deaths and a total of 62,337 births are reported for the whole State, being an increase of 2,762 death returns and 3,144 birth returns, as compared with the returns of the previous year. While there is noted this general improvement, a few counties still show a laxity of interest and consequent comparative imperfection of returns.

MEMBERS OF THE BOARD.

David Engleman, M.D., Easton, President.
Pemberton Dudley, M.D., Philadelphia.
J. F. Edwards, M.D., Philadelphia.
Howard Murphy, C. E.,Philadelphia.
J. H. McClelland, M. D., Pittsburg.
George G. Groff, M.D., Lewisburg.
Benjamin Lee, A. M., M. D., Secretary and Executive Officer, 1532 Pine St., Philad'a.

SPECIAL REPORTS.

MINUTES OF THE NINTH REGULAR MEETING OF THE STATE BOARD OF HEALTH OF PENNSYLVANIA.

The Ninth Regular Meeting of the Board was held Wednesday May 16th, 1888, at the Baker House, Lewisburg, at 8 P. M. All the members present, the President, Dr. Engleman, in the chair.

On motion it was resolved that the Hon. S. T. Davis, M. D., of Lancaster, present in Lewisburg by invitation of the Board to preside at the Sanitary Convention about to be held in the borough, be invited to attend the sessions of the Board.

The minutes of the last regular meeting held Nov. 9, 1887, were read and approved.

The minutes of special meetings held Nov. 30, 1887, Jan. 11, 1888, and Feb. 29, 1888 were also read and approved.

The Secretary then presented his report, embracing the following items:

1. Disposition made of the resolutions on the subject of quarantine of the Delaware River. The resolutions had been forwarded to his Excellency the Governor of this State, who had signified his readiness to coöperate with the Governors of the adjoining States of New Jersey and Delaware in making application to the general government for more efficient quarantine service in Delaware Bay, to the Board of Health of the city of Philadelphia and to the Supervising Surgeon-General of the United States Marine Hospital Service, Dr. John B. Hamilton, who had embodied the resolution of the Board in his weekly bulletin. Accepted and referred.

2. Inspection of the State Hospital for the Insane at Norristown, including a report from Medical Inspector Atkinson, correspondence with the superintendents of the institution, and analysis of the water and ice used by the inmates. This inspection was made in consequence of the prevalence of typhoid fever in the institution. It showed that the dormitories were overcrowded, the air of the corridors vitiated by persons sleeping in them during the night, and probable contamination of the air by the separating tank of the sewerage system. The Superintendents testified that every possible precaution had been taken to disinfect the excreta of the typhoid patients, and subsequently bury them from the moment the disease was discovered. The Secretary was thus enabled to calm the apprehensions of residents of Chestnut Hill and vicinity, who feared that their water supply from the Schuylkill river would become infected from this source. Analyses of the water and ice used in the institution furnished by the Superintendent of the Women's Department showed both to be free from dangerous impurity, while others made by a well known Philadelphia chemist gave a very different result.

The subject was on motion referred to a committee composed of the Chairman of the Committee on Water Supply and the Secretary for further investigation, with authority to take such action as they should deem advisable, and to report at the next regular meeting. The report was accepted and referred for publication.

3. Action of the Secretary on reference to immigrants discharged from the New York Quarantine Station, where they had been detained on account of exposure to Asiatic Cholera. This comprised a notification to the Quarantine Commissioners of the Port

of New York, that immigrants thus discharged would not be allowed to enter the State of Pennsylvania, unless provided with a certificate that they were free from the danger of communicating the infection ; a list received from the Secretary of the State Board of Health of New York of all immigrants discharged from Quarantine destined for towns in this State, a circular letter addressed to all Boards of Health, Mayors and Burgesses of cities and boroughs in Pennsylvania, to which these immigrants were bound with the lists of names in each case, recommending that such immigrants be kept under close observation during the period of incubation, and letters to all presidents of rail-roads in the state, warning them not to accept such passengers without a certificate from the Quarantine Commissioners as aforesaid. The officers of the rail-road companies had as usual shown a most intelligent readiness to coöperate with the Secretary in all efforts to prevent the introduction and spread of contagion within the limits of the State. The President of the Penna. R. R. Co. in particular having requested suggestions from the Secretary in reference to measures of precaution to be adopted in the case of persons affected with Cholera on the trains of the company, the secretary replied, suggesting the determination in advance of certain houses of refuge near the boundaries of the State and away from centres of population, to which the sick could be removed for treatment and the exposed for isolation and the substitution of earth closets for open holes on all passenger cars. Report accepted and ordered to be published.

4. Small-pox having made its appearance at Lowhill, Lehigh County, and there being at that time no inspector for that district, the Secretary had telegraphed the President requesting him to investigate. That gentleman being confined to the house by illness, the Secretary instructed Dr. P. L. Reichart, Health Officer at Allentown to make an inspection and report. Three distinct centres of infection were found, all originating in cast off clothing of tramps at Lowhill. These were Lowhill, Catasauqua, and Slatington. The cases were quarantined, free vaccination enforced, the clothing burned and the incipient epidemic aborted.

The report was accepted and referred for publicatian.

5. A specimen of candy sent to the Secretary by Inspector Payne of Towanda, which was thought to have caused the death of a child, had been analyzed by Dr. Leffmann, whose report was read, showing that the candy owed its color (a bright red) to Esoine in too minute a quantity to be harmful and that it contained no mineral irritant poison such as the symptoms might be attributable to. Accepted and referred.

6. A report on Contamination of Wells and of the Atmosphere by Human Excreta, made under the instruction of the Board at its last meeting, by the Secretary, was ordered to be published.

7. Drs. Engleman and Lee reported as delegates to the National Pure Food Convention, held at Washington, D. C., Jan. 18th—20th, 1888 that the Convention after free discussion, had notwithstanding the presence of obstructionists in the presence of retail tradesmen, succeeded in adopting a proposed bill to prevent the importa-

tion of adulterated foods and drugs or their manufacture in the territories or in the reservations belonging to the National Government. The Secretary presented a printed record of the proceedings of the Convention and was instructed to incorporate such portions of it in the annual report as he may deem advisable.

8. The Secretary reported on behalf of Dr. Engleman and himself as delegates to the National Conference of State Boards of Health, held in Cincinnati, May 4, 5 and 7. The Secretary had opened the discussions on the following subjects: "Should the National Government assume control of Quarantine at all Ports of Entry?" and "What Should be the Attitude of State Boards of Health towards Leprosy."

As a result of the first discussion a resolution was passed requesting the National House of Representatives to pass the Senate Bill, authorizing the establishment of seven new Quarantine Stations. In reference to the second a Committee was appointed of which the secretary was made Chairman, to report at the next meeting of the Conference. The most important practical result of the Conference was the appointment of a special committee to visit, inspect, and report upon the various quarantine stations both of the Atlantic and Pacific Coasts. To the sub-committee of which the Secretary was made Chairman, were assigned the upper southern stations from Baltimore to Wilmington, S. C. The Secretary had prepared a complete report of the Conference, which was in the hands of the editor of the ANNALS and requested that it might be made a part of the Annual Report of the Board. It was ordered.

The Secretary stated in this connection that he had also attended the meetings of the Section on State Medicine of the American Medical Association, held in Cincinnati, May 8, 9 and 10, at which subjects of great interest were discussed, and before which he read a paper under the title, "Should not the National Government defend our Ports against the Common Enemy, Contagious Disease?" As a result of the discussion elicited by this paper, the section adopted a resolution requesting the Association to take similar action as that just recorded as having been taken by the Conference of State Boards of Health. The Association acted formally on the suggestion, and the resolution was at once transmitted to Congress.

The importance and urgency of this question will be appreciated when it is remembered that the Quarantine defenses of the Delaware have been pronounced by intelligent physicians to be wholly inadequate, and that the contemplated action would put us in possession through the National Government, of a station fully equipped, and amply officered; the Secretary gave notice that he would call up this subject under the head of unfinished business for the purpose of offering a resolution. The report was accepted and referred.

9. A brief history of the present outbreak of Small-Pox in Philadelphia was then given, embracing reports from the Health Officer of Philadelphia, Mr. Joseph G. Patterson, showing that while the Board of Health of Philadelphia had acted with most commendable promptness in isolating all cases as soon as discovered, and pro-

viding free vaccination, a lax administration of Quarantine must be held responsible for the introduction of the disease, and the consequent suffering, mortality, annoyance and expense. All State Boards of Health throughout the country and those in cities of Pennsylvania in more direct communication with Philadelphia had been duly notified of the existence of the disease.

10. In the early part of the winter this disease had also been introduced into the city of Chester, by a negro woman, who had gone to visit friends in Wilmington, Delaware, in whose house it prevailed, and returned to communicate it to her own family. The probable origin in Wilmington was rags in the Augustine Paper Mill. The Board of Health of Chester took proper measures of isolation and disinfection and only four cases occurred.

11. From Philadelphia the disease had been carried to Bentleysville, Washington County, where two deaths had occurred. The report of Inspector Hunter who visited the place with Dr. J. R. Thompson of Pittsburg, shows that his action combined with that of the Overseers of the Poor and Dr.——, a neighboring physician, prevented any further extension of the contagion.

12. A case of variola was also reported in a lumber camp at Horton City. This was investigated by Medical Inspector Free, the Quarantine already established by Dr. Early was sustained and free vaccination practiced. No extension of the disease.

13. In the month of March, the Secretary issued the following circular to every Board of Health and to every Borough Council in the State :

"This Board has received official information since the first of the year of the existence of small-pox in nine States of the Union. Two outbreaks have occurred in this State. The State Board of Health of California has declared it epidemic in that State. It is raging with great virulence in the neighboring Island of Cuba, where sanitary precautions appear to be extremely lax, and with which we are in constant communication. It has prevailed extensively during all the past winter in portions of Great Britain. In the neighboring State of Delaware cases exist and several deaths have occurred as the result of the importation of rags. This Board deems it its duty to urge upon all municipal and sanitary authorities the importance First, of doing all in their power to promote vaccination in their respective communities, and, Secondly, of keeping all newcomers and returned travellers, and especially all immigrants under observation for fourteen days after their arrival in order that should symptoms of this disease manifest themselves, steps may be taken to circumscribe and isolate the centre of infection with the least possible delay." The notification was endorsed and referred for publication.

14. On the 23 of December, 1887, Dr. G. W. Guthrie, Secretary of the Luzerne County Medical Society addressed a communication to Dr. L. H. Taylor, Medical Inspector of the Board, calling his attention to the fact that the water supply of a portion, at least, of the city of Wilkesbarre was threatened with serious pollution by the excreta of the laborers upon the new branch of the Lehigh Valley R.R. extending from Pittston to Fairview.

Dr. Taylor immediately communicated with the Secretary, who instructed him to investigate and report. His report, which is herewith communicated, more than sustained the allegations of Dr. Guthrie. The following order was at once issued to every contractor on the line:

"You are hereby notified and required to abate and remove, within ten days from the date of the service hereof, a certain nuisance, on the above mentioned property, consisting of excreta from the laborers employed along said rail-road, which nuisance has been declared to have a tendency to endanger and be prejudicial to public health. On failure to do and perform which, suit will be immediately entered against you, agreeably to the Provisions of the Act of Assembly. In order to effectively abate and remove the nuisance referred to it is hereby ordered that all deposits of excreta from men engaged on said line within five hundred feet of the banks of Mill Creek, Laurel Run, Solomon's Creek or of any stream tributary to either of the aforesaid streams, be removed and buried, and the ground disinfected; that suitable privy arrangements be provided at each station, with pits at least five feet deep and situated at least five hundred feet from the banks of any of the aforesaid streams, and that small pits be provided for each separate gang of men for daily deposit of excreta during working hours, the same to be filled with dirt and new ones dug as the work progresses from point to point."

At the same time Medical Inspector Atkinson was instructed to visit the office of the Lehigh Valley R. R. Co. in Philadelphia, and request the coöperation of the officers of the road in the effort to preserve the purity of the water supply of this large and flourishing city. The Secretary, Mr. Fanshaw at once promised to communicate with the officials on the spot and to do all in his power to aid the Board in the matter. The Secretary asked leave to interrupt the thread of the history at this point to bear testimony to the readiness of the Railroad officers to accept suggestions from, and work in harmony with the Board, whenever it became necessary to appeal to them. Intelligent, large-minded and far-seeing, instead of being offended at what might be assumed to be an interference in their private affairs, they show the most sagacious appreciation of sanitary problems and the fullest acquiescence in all suggestions designed to promote the public welfare). Dr. Taylor in a report received to-day, states that the orders of the Board have been scrupulously carried out, and that up to the present time there is every reason to think that the threatened danger has been entirely averted. The report was accepted and ordered for publication.

15. Correspondence was then presented in regard to an objectionable advertisement in certain lines of street cars in Philadelphia, in which the statement was made that the State Board of Health of Pennsylvania recommended a special kind of beer. The subject led to a considerable discussion, and was referred to a committee consisting of Drs. Edwards, Dudley and Lee, to report at the next session. The Board then adjourned to meet at 10 A. M. the day following.

The Board was called to order by the President at 10 A. M., Thursday, May 17. The reading of the Secretary's report was then proceeded with as follows:

16. Correspondence between the Board of Trade of the city of Chester and the Secretary embracing the following preamble and resolutions communicated by the said Board:

"Whereas the present Quarantine Station, established for the prevention of the introduction of contagious and infectious disease into the city of Philadelphia is located within four miles of the city of Chester, with a surrounding population of forty thousand persons, and

"Whereas: The great danger of the spread of contagious diseases through the immediate adjoining population defeats the very object for which it was established. Therefore,

Resolved: That the Board of Trade of the city of Chester on behalf of the citizens protest against the continuance of the Quarantine in its present location, and earnestly recommend the establishment of a National System of Quarantine and the removal of the Station complained of at the earliest practicable time." To which the following reply was returned:

W. C. Gray, Esq.,
Sec'y. Board of Trade of Chester.

Dear Sir—I hereby acknowledge with thanks the receipt of a copy of a preamble and resolution adopted by your honorable Board on the subject of the Quarantine of the Delaware River. Your action has my hearty approval. It has not been begun a moment too soon. I am of the opinion that next summer ought not to find the Quarantine Station at Tinicum. All who are interested, and that in fact includes the entire population of the State, should unite in the efforts to obtain appropriate legislation on this subject from Congress. The papers which I have the honor to enclose will show you the feeling of the State Board of Health upon this momentous and pressing question.

I have the honor etc.

The papers alluded to in the above letter were the resolutions on that subject passed at the last meeting of the Board. The correspondence was referred for publication.

17. The Secretary then presented a very voluminous and valuable report from the Pittsburgh Board of Health made by a committee of that body in reference to the water supply of the South Side, accompanied with full analyses and microscopic photographic illustrations.

On motion of Dr. McClelland it was ordered that it be embraced in the Annual Report of the Board, together with the illustrations.

In this connection Dr. McClelland stated that before leaving home he had learned that a barge loaded with the offal and refuse of several slaughter houses, had been sunk in the Monongahela River, close to the intake of the South Side water works, and the Pittsbugh Board of Health had declared its inability to abate the nuisance, because it is located beyond the city limits. The Secretary stated that immediately before the session he had had an interview with Mr. McKelvey, the Superintendent of Public Health of Pittsburgh, who had given him similar information. If upon his return home, the Superintendent found himself unable to abate the nuisance, and would enter formal complaint with the Board. all its power would be used to give relief.

18. The Annual Report of the Board of Health of Altoona, was then presented, and the Secretary was authorized to include in the Annual Report, such portions of the same as he

might deem useful.

19. A Report on the Improved Drainage of the Executive Mansion at Harrisburg, made after an inspection, by the Secretary was presented and accepted, with the suggestions of the secretary endorsed.

20. An inspection of the ponds which produced a portion of the ice supply of the Borough of West Chester, made at the request of the Board of Health of that Borough by Medical Inspector Atkinson, showed gross sources of pollution to exist, and was corroborated by analyses of the water and of the melted ice made by Dr. Cresson of Philadelphia. The report recommended that the ice from these sources should never be allowed to come in contact with articles of food or drink, which recommendation was endorsed by the Board and the report ordered to be printed.

21. Since the regular meeting in November, the following circulars, forms and blanks have been prepared by the Secretary and furnished by the State Printer:

Five hundred Circular Letters to physicians for use during epidemics.

Ten thousand circulars to physicians on the Diagnosis of Typhoid Fever.

Ten thousand Model Ordinances for cities and boroughs, second edition.

Two thousand blank forms—Return of a Birth.

Two thousand blank forms—Return of a Death.

Two thousand blank forms of a Still Birth.

Two thousand blank forms—Return of a Communicable Disease.

Two thousand blank forms—Disinterment Permit.

Five hundred forms of Acknowledgement.

Five hundred blank Orders to Abate.

Three hundred forms—Appointment of Inspectors.

Two thousand forms—Permit for Transportation of Dead Bodies.

Seventy-five thousand copies—Circular on School Hygiene, principally prepared by Dr. G. G. Groff.

Twenty thousand copies—Circular on Typhoid Fever (No. 18), second edition.

Twenty thousand copies—Circular on Scarlet Fever (No. 21), second edition.

Twenty thousand copies—Circular on Diphtheria (No. 19), second edition.

Twenty thousand copies—Circular on Contagious Diseases (No. 20), second edition.

Five thousand pamphlets—Compendium of Sanitary Laws.

Five hundred pamphlets—Proceedings of Sanitary Convention.

Ten thousand invitations and programmes for Sanitary Convention.

The secretary also presented a list of stationary and furniture now in possession of the Board, and of articles of stationary and furniture for which he had made requisition for the ensuing year, which were ordered on file. The report of the Secretary was then on motion, adopted as a whole.

Reports of Standing Committees being in order, Dr. Pemberton Dudley, Chairman, reported on behalf of the Executive Committee, that it held two regular and three special meetings since the last meeting of the Board in November, at which bills had been audited to the amount of $1123.77, representing vouchers No. 178 to No.

207, inclusive. The committee also referred to the Board, letters from Dr. Titman, of Chestnut Hill and the District Attorney of Montgomery County, asking for information on the subject of registration. On motion, the report was accepted and ordered for publication.

The Committee on Registration of Vital Statistics, Dr. Lee, Chairman, reported that complete returns of Medical Practitioners had been received from the following couties: Armstrong, Bedford, Beaver, Blair, Butler, Chester, Centre, Cameron, Cumberland, Columbia, Crawford, Dauphin, Delaware, Erie, Elk, Huntingdon, Indiana, Jefferson, Juniata, Lycoming, Lehigh, Mercer, Montour, Montgomery, Philadelphia, Potter, Perry, Schuykill, Susquehanna, Union, Venango, Warren and Washington, and that he hoped to get returns from the remaining counties in time for publication in the next Annual Report. In connection with this subject, he read an extract from Dr. William Pepper's able report on the Geographical Distribution of Phthisis in Pennsylvania, showing the lamentable need for a legal system of registration of deaths, throughout the State, and referred to the letters of Dr. Titman and District Attorney Wagner, already alluded to by Dr. Dudley in the Report of the Executive Committee, from which it appeared that there is no registration or return of death in that county, unless there is reason to suspect criminality. The report was received and ordered to be published.

Dr. Edwards, Chairman of the Committee on Preventable Diseases, presented as a report, a Manual of Camp Hygiene for the use of the National Guard of the State of Pennsylvania, the subject having been referred to that Committee at the last regular meeting. On motion, the entire manual was read and was then approved for publication, it having already been submitted to the criticism and received the approbation of the officers of the Guard.

The Committee on Water Supply, Drainage, etc., Mr. Howard Murphy, Chairman, reported in reference to a complaint, of the pollution of a stream by the sewerage of the City of Altoona, said stream running through the village of Allegheny Furnace. On motion, the subject was referred back to the Committee, with instructions to make a personal inspection of the stream, together with the Secretary and to report at the next regular meeting.

In reference to the drained lands of the Schooley Shaft in the boroughs of Wyoming and Exeter, Luzerne County, the Committee recommended that as the lessee of the mine had failed to keep the promise made to the Committee and Secretary of remedying the evil, the Secretary be instructed to take legal steps to enforce the authority of the Board in the premises. It was so ordered, and the Report was accepted and ordered to be published.

The Committee on Public Institutions and School Hygiene, through its Chairman Dr. McClelland, called attention to the Circular on School Hygiene just issued by the Board, indicating certain alterations which it would be well to make in a future edition, and moved that the Committee be instructed to issue a second circular, designed for distribution among school directors and superintendents, containing hints as regards the constructing, heating and ventilation of school buildings. It was carried, and the report was accepted and referred.

There having been no meeting of the Legislature since the last meeting of the Board, Dr. Groff, Chairman of the Committee on Sanitary Legislation, simply reported progress.

The Committee on Adulterations, Poisons, etc., Dr. Pemberton Dudley, Chairman, reported that the subject of the use of dangerous substances in the manufacture of blueing powders and liquids for laundry use, referred to the Committee at a special meeting, had been under consideration, but no analyses had as yet been made and the Committee would merely report progress.

On motion the Board then adjourned to attend the session of the Sanitary Convention, and to meet after the adjournment of its first session, at 5.30 P. M.

The Board met pursuant to adjournment, at 5.30 P. M., the President in the chair. The first business in order, was the Report of the Special Committee on Popular Lectures. Dr. Edwards, the Chairman reported that he had been in communication with prominent men in several towns, making arrangements for the delivery of such lectures during the approaching fall and winter.

Dr. Groff, a member of the same Committee, reported that he had delivered two such lectures during the Christmas holidays. He was inclined to the opinion that sanitary conventions, such as the one now in progress would prove a more efficient means of imparting instruction and awakening popular interest than isolated lectures of which the people were becoming somewhat tired and indeed, regarded with suspicion. The report was accepted.

On behalf of the Committee on Sanitary Convention, at Lewisburgh, Dr. Groff, the Chairman, reported verbally that the Committee had secured the valuable services of Hon. S. T. Davis, as President, and to deliver the Annual Address, as well as of distinguished members of the profession from a distance and citizens of Lewisburg to read papers. The residents of Lewisburg were much interested in the proceedings, and he had no question that much good would result. The report was accepted and the thanks of the Board were extended to Dr. Groff for his earnest and successful efforts in the organization of the Convention. The portion of the Secretary's report, which related to the proceedings of the National Conference of State Boards of Health in reference to Quarantine was brought up and the following resolutions offered, which were unanimously adopted.

Resolved: That this Board, respectfully urges upon the House of Representatives of the Congress of the United States, the importance of the immediate passage of the Senate Bill, now before their honorable body, providing for the establishment, equipment and maintenance of seven quarantine stations on the Atlantic and Pacific coasts.

Resolved: That it is the sense of this Board ; first, that a strict quarantine should be established against Leprosy, and that all lepers attempting to enter this country, should be returned to the port or country whence they came. Secondly, that those already in this country or who develop the disease here, should be rigidly segregated. Thirdly, that it is eminently desirable, that entirely distinct hospitals should be provided for such cases; and fourthly, that the bodies of decayed lepers should be cremated after thorough disinfection or buried in lime, their personal effects be destroyed by fire and their habitations thoroughly disinfected.

Resolved: That it is the sense of this Board, that in as much as Scarlet Fever and Diphtheria which are eminently contagious and transportable diseases, cause more deaths in this country than all other contagious diseases combined, they should be subjected to strict quarantine at ports of entry and vigorously isolated wherever they occur.

Resolved: That it is the duty of all School Boards to adopt regulations, making vaccination a pre-requisite to attendance in the public schools of this Commonwealth, and that the regulation adopted and at the present time rigidly enforced by the Board of Public Education, of the City of Philadelphia, be recommended for adoption by every school Board throughout the State, so that no unvaccinated child shall enter the public school after the approaching holidays. The following is the regulation of the Philadelphia Board referred to in the resolution:

"No child shall be admitted or continued as a pupil in any school in the district, who has not been vaccinated; and it shall be the duty of the principals to report, quarterly, to the Sectional Boards, the number of non-vaccinated children applying for admission as pupils to their schools, and the names of the pupils, if any, who have not been vaccinated; and these reports or copies of the same, shall be transmitted to the Board of Public Education by the Sectional Board. If any principal shall fail to comply with this rule, the salary of said principal shall be withheld until the rule shall be complied with. When Small-pox, Varioloid, Scarlet Fever, Diphtheria or Measles, shall exist in a family wherever any pupil of the public school is a member, such pupil shall not be permitted to attend school until he or she shall present the certificate of a physician, stating that all liability to contract disease by contact with the members of the family of such pupil has passed away."

Mr. Murphy called up the subject of Legislation for the Protection of Water supplies, and on motion of Dr. McClelland, the Committee on Water Supply was instructed to prepare a bill to be submitted to the next Legislature, giving the State Board of Health supervision over all proposed plans of introducing water into cities and towns for drinking purposes.

Nominations for the position of analysts was then in order, and the whole subject was referred to the Secretary to be acted on at his discretion, the sense of the Board appearing to be that with the present amount of appropriation, the question was not an urgent one.

The account which had been audited by the Executive Committee since the last meeting, including vouchers 202 to 207 inclusive, were approved.

On motion of the Secretary, it was ordered that three copies of the Annual Report of the Board be strongly and handsomely bound for safe preservation in the Library at Harrisburg, in the Library of the Board at

Harrisburg and in the Library of the Executive Office. Mr. Murphy moved that the Engineers' Club of Philadelphia be placed upon the list of Exchanges for the Annual Report, it was carried.

On motion of Dr. Dudley, it was ordered "that the Secretary be empowered to vacate any of the inspectorships of the Board during the interval between any two regular meetings, wherever he may deem it best for the interests of the Board so to do." Nominations for inspectorships being in order, the Secretary presented the name of Dr. C. L. Gummert of Brownsville as Inspector of the Southern Tier District, including the counties of Fulton, Bedford, Somerset and Fayette. The Secretary stated that Dr. Gummert is United States Pension Examining Surgeon, and is endorsed by the Secretary of his County Medical Society, Dr. Gummert was duly elected.

The Secretary presented the resignation of Mr. L. H. Hunter, Inspector of the Allegheny District, on the ground that his appointment in the Department of Public Health in the City of Pittsburgh, would prevent the proper discharge of his duties. The resignation was accepted and on nomination of Dr. J. H. McClelland, Dr. S. R. Thompson, of Pittsburgh was appointed his successor.

The Secretary then presented an opinion recently forwarded him by the Attorney-General of the State, Mr. Kirkpatrick confirming the powers of the Boards of Health of certain cities, to remove persons ill with contagious diseases to the hospital. It was ordered to be embraced in the Annual Report.

The Secretary presented a communication from the Fall Brook Coal Company of Antrim, Tioga County, requesting the appointment of a Special Inspector for that village. The sentiment of the Board proved decidedly averse to the appointment of such special officers, but the subject was referred to the Secretary to be acted upon at his discretion. On motion, the Board then adjourned to meet at ∞ P. M., to listen to the Annual Address.

Pursuant to adjournment, the Board met at 8 P. M., at the Music Hall. Dr. S. T. Davis, of Lancaster, member of the House of Representatives of Pennsylvania, President of the State Sanitary Convention, at that time in session, delivered the Annual Address before the Board, on the importance of a thorough sanitary organization of the rural districts of the State under legislative sanction.

The address which was interesting, as well as learned and able, was listened to with marked attention by the large and intelligent audience. At its close, the speaker urged that the State Board of Health should hold at least, two Sanitary Conventions annually, at different points throughout the State. The Secretary moved that the thanks of the Board be tendered Dr. Davis for his interesting and valuable address, and that it be referred to the Executive Committee for publication in the Annual Report. It was carried.

The Board after listening to a report by Pemberton Dudley, M. D., on "The Heating and Ventilation of School and Assembly rooms," adjourned.

BENJAMIN LEE, Sec'y.

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COMMUNICATIONS.

HOUSE-BUILDING FROM A SURGEON'S STANDPOINT.*

BY HAL C. WYMAN, M. S., M. D.,

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Detroit.

The title selected for this paper is perhaps a little ambiguous. I wanted to describe some of the things found about badly-constructed houses which interfere with the health and happiness of the inmates by causing something besides malaria. Everybody talks about malaria, until the word is made to represent so many human ills that it is difficult to assign it any scientific meaning. For one I would like a change, after having heard the varied use of the word for many years, and think it must be possible that other diseases have their origin in faulty dwellings. One case of hip-joint disease, which I think is often caused by bad stairways, represents a larger sum of human suffering in the two to ten years commonly comprised in its course, than twenty cases of the varied and uncertain malady known as malaria. I have wearied of the constant ding dong about sewerage and ventilation, and desire to hear discussion about something besides traps, drains, fans, shafts, flues and closets. When we consider the immense influence which accidents have upon our death-rate, we see the need of something to diminish their number. The American Public Health Association has endeavored, by means of prize essays, to popularize means for the prevention of accidents in large manufacturing institutions. Rules for the care of injured persons and lectures to employees of railways have told how and what to do for the aid of the wounded before the arrival of the surgeon, but much of the information set forth in that way may be summed up in the answer of the medical student who, when asked during his final examination for the doctor's degree what he would do in case he was called to attend a man with a bleeding artery, said he would "run like blazes for a doctor."

STAIRS.

For these implied reasons I wish first to speak of stairs, because they are in many instances the source of accident and serious disease. Often the stairways are too steep, the tread being too narrow and the rise too high, and persons are consequently quite likely to fall. The ideal stair would be represented by a tread double the width of the rise; that is, a tread twelve inches wide would have a rise six inches high. In former years, when ceilings were low, houses not infrequently contained stairways with a tread of twelve inches and a rise of five; but such a step to our unaccustomed feet is not easy and therefore not always safe. Children suffer more frequently than adults from defective stairs. The not uncommon picture is presented of a mother or some guardian member of the family leading a little one of two to five years down a stairway, holding on to the little hand, with the arm extended above the head; the stairway steep, the rise perhaps seven or eight inches and the tread not a whit wider. The little one, with his weight half suspended, suddenly drops on one hip in such a way as to bring the full weight of the body upon that part. This act being repeated as many times as there are steps in the stairs, gives us one of the surest means of producing the dread calamity known as hip-joint disease. When we think of the extreme frailty of the hip joint in these little ones, how the bones of the hip are not yet firmly knit together, we appreciate how necessary it is that the weight of the superimposed structures should be evenly distributed over both hips and all the tissues composing the joints, in order to avoid one part being subjected to more strain than another, and in consequence more likely to become the seat of the disease.

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*Read before the Owosso City (Mich). Sanitary Convention.

That portion of the tread of a stairway which projects over the rise and is known as the nosing often projects too far, so that in ascending, old persons, whose muscular sense has become impaired by age, are very likely to stumble and fall, frequently producing fracture of the hip or other portions of the body. My own experience in accidents resulting from this cause embraces several cases of fracture of the neck of the femur, occurring in persons over sixty years of age, not one of whom has ever been able to use the limb with anything like comfort or facility.

The light of stairways is often bad. For some reason builders find it convenient oftentimes to put the stairway in the darkest portion of the house, and for the purpose of economizing space, not infrequently stairways that are dark make sharp turns, which are still darker and which are veritable pit-falls to those ascending and descending who are not, by the experience of several falls, familiar with their location. The turn in such stairways usually embraces a series of steps which are much narrower at one end than at the other, and consequently have a tread varying in width in the same step, so that, in the darkness, a person unaccustomed to them is quite certain to make false steps and fall. Innumerable bruises, wounds of the scalp, abrasions of the face, fractures of the jaw, of the leg, of the arm and of the thigh have in my experience resulted from this cause. The turning point in stairs of the character just described should have ample illumination by a window.

The rail and newel-post of stairways should always be of sufficient strength to perform the purpose for which they are intended, namely; to provide a grasping place and to sustain the weight of any person ascending or descending the stairway and to serve as a life rope in cases of falls, or stumbles resulting from unpreventable causes. The fact that children and the younger members of the family are sometimes disposed to use the banister as a toboggan slide, and that they often meet with accident by falling to the floor or striking against the newel post, would make it appear advisable to have the stairway rail constructed in such a manner as to make sliding on it impossible.

The head room in stairways is often insufficient, and tall persons descending such stairways many times receive serious injuries of the head or spine by striking their heads. The writer has known one rather tall lady to get a serious disease of the bones of the neck which will cripple her for life, by striking her head while ascending one of these narrow stairways with insufficient head room. The tendency among housebuilders of the last generation to get as much space as possible between floor and ceiling has led to the erection of steep and unsafe stairways of the kind just mentioned. Oftentimes the length and breadth of rooms is less than the height and such a plan necessarily imposes steep stairs, with narrow treads, high rises and low head room. No doubt the height between floor and ceiling is largely for the purpose of increasing the quantity of air contained in the rooms; but we should not lose sight of the fact that in the endeavor to secure plenty of fresh air by this means we may impose upon the inmates of the house greater dangers from accidents upon steep and badly constructed stairways than would naturally result from breathing the air of rooms of lesser height.

Stairways that are much frequented by children ought, I think, to be covered with thick pads and carpet, the latter securely fastened with strong nails to prevent its catching or tangling the feet, because children are very apt to stumble and strike upon stairways in such a way as to produce concussion of the spine, which often bruises the cartilages between the bones of the spine, and lays the foundation for most serious disease and deformity. If the force of such falls is broken by striking upon something soft, like the pads just mentioned, dangers of this kind would be greatly diminished.

These measures to many may seem extreme; but anyone who has ever seen a case of Pott's disease of the spine, who has noticed the gradual loss of strength, the constant pain, the sleepless nights, the peevish cry, and who has seen the sharp angular curvature of the spine which follows, the fever and the sweats and the pus from deep-seated abscesses, and who has watched over the little one and helped him to use the crutches, the braces or the casts, which the surgeon has devised for the purpose of mitigating the disease and preventing the dreadful curvature and deformity of the spine, cannot find fault with any measure, no matter how elaborate or expensive, which gives promise of diminishing any of the accidents which are likely to be followed by this disease.

FLOORS.

The floors of houses are not always as they should be to give the minimum number of accidents. Unevenness of surface provokes falls which require the services of the surgeon to make bodily repairs. Different rooms sometimes have floors of different heights. A very common defect in the ordinary houses of Michigan and the north and west is found in having a difference in the height of the floors of the kitchen and dining or sitting room. The L portion or the annex to that part of the house commonly known as the upright, usually contains the kitchen and the rooms in which much of the female labor of the domestic establishment is performed. This very commonly is six or eight inches, sometimes a foot or more, lower than the adjacent or upright portion of the house, which in many instances will contain the dining-room and will be constantly visited by the women who are working in the lower portion of the house, making it necessary for them in the ordinary pursuit of their labors to step up and down this place innumerable times every day. It is not necessary for me to speak of the various accidents and injuries which result to women from this cause. They must be apparent to every one who will for a moment think of the amount of muscular effort which is necessary to lift the body innumerable times every day to the height represented by the step or steps indicated. I know of no reason why this difference in the height of floors between the two portions of the house should be so common ; but if you will take the pains to notice you will find that one-half of the houses being erected to-day in this city will contain the very defect mentioned. Another matter which concerns the floors of houses is that of nailing a board upon them varying in thickness from half an inch to an inch and a half under every door, known as a threshold. This relic of barbarism, which has occasioned more broken heads and noses than all the shillalahs of old Ireland is happily quite uniformly left out of modern houses; but it is still found often enough to keep the wolf from the surgeon's door, and should be torn out without further delay. Its purpose originally, I presume, was to compensate for any imperfection in a nice work of door hanging and door framing, which only skilled carpenters can do. Without the threshold, the door-post and the hangings must be perfectly perpendicular, else the door rubs upon the floor and is not easily moved. But there is no excuse for such imperfections in these days of skilled mechanics.

New floors sometimes contain ragged boards which sliver easily. I have known several accidents of a serious nature to result from this cause. Striking the bare feet against them, they penetrate and wound the foot. Children playing and sliding or creeping as they often do, upon the floor, have had these splinters of wood driven not only deeply into the skin but even into the joints, like the knee and ankle, setting up most serious disease.

WINDOWS.

The windows of houses are a constant menace to the fingers, hands and heads of those persons who find it necessary to raise and lower them. The frequent want of perfect fixing apparatus for holding the sash to prevent its falling has led to many fractures and in some instances to amputations of the fingers and hands. The weights that are attached to sashes and run inside the frames to serve as a counterpoise should be carefully constructed. Defects here may be very often the source of accident. The person lowering the window, not knowing that the rope is broken, pulls out the stick or lifts the catch with one hand resting on the window sill, and suddenly finds the sash descending like a guillotine, crushing the hand or fingers beneath it. I have known the head to be cut and the deep tissues of the neck seriously bruised by imperfections in the window fixtures. The fastenings by which the windows are secured when closed, or held when opened, should be maintained in perfect working order and should be of a kind that rarely gets out of order. The haste with which people sometimes endeavor to lower or raise a window at the approach of storms, or for other reasons, leads them to grasp these fastenings violently, and to exert such an amount of force that, when the fastenings do not yield readily, the fingers are often badly torn, and felons and abscesses of the tendons and bones of the fingers and hands result,

DOORS.

The keys, bolts and knobs, the fastenings of doors should be in perfect, easy working order. A bolt which refuses to slide or a knob that hesitates to turn or a key that rubs and chafes in the lock may cripple and wound the hand that pushes or turns it. Felons are very often caused by defects in these articles. Too much force is put upon the recreant bolt and the soft structures overlaying the bones of the finger or hand become injured, bruised or broken. Inflammation and abscess follow, giving rise to a felon or palmar abscess. The former often leaves a finger ruined for life, the latter frequently leaves the hand useless by contracting all its tendons, pulling the fingers in upon the palm and distorting it out of shapeliness and usefulness. Knobs are set too near the door edge, so that in opening the door the fingers are caught and bruised against the door frame. Springs are sometimes put upon doors to make them shut automatically. They are in some cases too strong and drive the doors to with such force that the children and weaker members of the family are unable to hold them. Serious bruises and crushed fingers and toes have been thus caused.

GAS-FIXTURES.

Gas-fixtures on the walls are very commonly projected at a point so low that they are an imminent source of danger to any one groping his way in the dark. They are usually about five feet from the floor, project eight to twelve inches from the wall, are often surmounted by sharp prongs which hold a globe, that is sometimes in fragments, and are located at just the right height to strike the face, eyes, ears and neck, causing dangerous hemorrhages and making frightful scars which sometimes disfigure for life, and have been known to blind.

The chandelier depending from the center piece is oftentimes so low that the heads of members of the household strike against it.

On one occasion the writer had a little patient whose head had been thrust against one of these chandeliers by a fond uncle, whose delight it was to catch up the little one and toss him as high as he could with probable safety. Not noticing that he stood beneath the chandelier, the baby was tossed upward, striking its head against one of the projecting prongs, whose only apparent purpose was to hang jumping-jacks and toys upon. A very serious wound of the head was produced. The habit of tossing babies into the air has perhaps very little to do with house-building, but if the male members of a family can not show their appreciation of the little ones in any other way, architects and builders ought to place the chandeliers high enough to be beyond the reach of the disasters just mentioned.

CELLAR DOORS, ETC.

Hatchways into cellars should be protected by railings when open. One man let his mother-in-law fall down the cellar stairway and was very properly sentenced for life for attempted murder. The stairs leading to cellars should be carefully guarded. The frequency of accidents in this part of the house makes the need of protection of this kind quite apparent.

A great many accidents in houses are caused by falling plaster. One of the lost arts seems to be that of making plaster. For some reason the plasterer entrusts the most delicate and essential portion of his art to the least skilled of his kind. The cheapest laborer mixes the plaster and it is not strange that the proportions of lime and sand—of calcium and silicic acid—are not evenly and properly mixed, to insure a good, firm setting plaster, and, in consequence, it sometimes falls crashing on the heads of people, occasioning a large variety of surgical injuries. The hair which should enter into the plaster is sometimes of inferior quality, too short and brittle, diminishing the tenacity of the key which projects through the lath and laps over, holding the plaster securely in position. The quality of lime, of sand, of hair, and of labor are factors which enter into the manufacture of plaster, which, if not properly observed and carried out, make a poor article, that falls from the walls at the most inopportune moments, occasioning the maiming and even death of those who may be beneath it.

Chimneys, when not built of proper materials, so that the bricks are held firmly together, become a source of danger to people about houses. High winds dislodge any loose bricks which may be about, fracturing the heads of people with whom they come in contact.

Roofs with loose boards, rafters, tiles, slates or iron railings upon them, should have all these articles removed or securely fastened. The force of winds upon roofs is difficult to calculate and too much pains cannot be taken to guard against any of the articles mentioned being blown off and falling upon the heads of people who may be passing. In cities and villages accidents from this cause are numerous.

It has not been my intention to mention all of the defects which exist in houses, and which are responsible for many of the scars, crooked limbs, distorted spines and sickly bodies of our fellow men ; but to mention a few of the more glaring evils which are most easily remedied.

THE DUTY OF THE STATE AS REGARDS THE PREVENTION OF DISEASE.*

By WM. C. WOOD, M. D.,
OF GLOVERSVILLE, N. Y.

If the man in the moon, by making a toboggan slide of a moonbeam, were to arrive in our midst and begin a study of the curious customs of the human race, he could not fail, I think, to be attracted towards that portion of mankind who have devoted their time and energies to the study of the cure and prevention of disease. For behold this strange paradox : A body of men, who profit by the misfortunes of others, whose means of livelihood depends upon the fact that there shall be sickness and suffering among their fellows yet devote the greater part of their efforts and study to the prevention of that upon which they depend for their support. While to their honor be it said, the profession are active, each according to his opportunities, in this direction, yet it cannot be denied that the "old Adam" in them has something to do with the case.

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*Abstracted from the MEDICAL REGISTER.

The reproach cast upon medicine is that it is not an exact science. The chemist, who before mixing two solutions writes the reaction on the blackboard, the astronomer who predicts an eclipse a year in advance, or the engineer who drives a tunnel through "Mont Cenis" with exactness, has an advantage denied to the physician. The latter may be certain of the physiological action of his remedies, may be never so sure of his diagnosis, may give the closest attention, and exert the highest degree of skill, yet there is ever one unknown quantity in his equation, one element in this problem, not to be determined in advance. To rid the profession of this reproach, both humanitarian and selfish reasons urge us on. The vitality of the patient is this unknown quantity that often sets all our most careful calculations at fault.

It is then, if we would make of medicine an exact science, to the raising of the average of vitality and the bringing of the individual so closely as possible to the average, that all our efforts should tend. To this end may we call to our assistance the power of the State, bearing in mind, however, the limitations placed upon that power—as only to be extended to those things in which the interest of the whole people is greater than that of the individual.

Thus, the liberty of a man suffering from small-pox may properly be restrained ; for the interest of the whole people, in depriving him temporarily of his liberty, is greater than his in being free, or receiving care and treatment at his own home.

It is through the following channels that the vitality of the race is being impaired. After this manner does modern civilization, like the Spartan lad, carry beneath its cloak the fox that gnaws at its vitals :

1. Through the hereditary transmission of disease.

2. By the "gradual syphilization of the race," as one writer calls it.

3. By the concentration of population in the centres of exchange whence come the dangers incident to defective sewerage, water supply, and ventilation.

4. Men are crowded together, using muscles and brains, where the air is impure and its quantity insufficient. They must herd together like wild beasts in rickety buildings piled story upon story, for room is more valuable than human life. And at the other extreme of society, idleness and the means of self-gratification are doing almost as great an evil. In these days it is cunning, not strength, that wins. So we cultivate the mental faculties at the expense of our physical powers. It is degrading to worship a prize-

fighter, no doubt; but it is also dangerous to encourage infant pianists or boy preachers.

Of these evils, such as cannot be entirely eradicated must be restrained. New laws, if necessary, must be enacted. Constitutions, if not changed, must be broadened in their interpretation to meet the necessities of the more complicated society of the present day. The syphilitic should be reported, quarantined, and looked after as the sufferer from contagious and loathsome disease. Did any of my readers ever stop to consider how many other ways than by sexual intercourse syphilis can be transmitted? Has any of them ever hazarded a guess at the number of innocent sufferers from syphilis there are in the world? Has the sufferer from hereditary disease, like consumption, the right to saddle a widow and unhealthy children upon the community, to be, in many instances, supported by the State? It sounds harsh; but nature knows no sentiment in the execution of her laws. Pity it is that disease of an hereditary nature should (ought to) keep true lovers apart; but far more is it a pity for the unfortunate offspring of such unions, brought into the world to drag out a miserable existence and beget more misery, or only to open their eyes upon this life to close them again forever. This possibility demands the separation. Prostitution cannot be stamped out by legislation; but the prostitute can be treated as the probable bearer of contagious disease, confined to certain localities, compelled to wear a distinctive dress, as is done in Sweden, and obliged to submit to medical inspection. Venereal disease may thus be, as far as possible, stamped out.[1]

Alcohol, excessively used, is productive of so much physical as well as moral injury that it, too, becomes a proper subject for State regulation. The manner in which that should be done has been made a political issue, and some form of control will undoubtedly soon be established.

The examination of food products, establishment of standards of purity, and prescribing of punishments for adulteration, are duties devolving upon the State. The disposal of sewage and the supplying of water are matters that have long been regarded as municipal; the question here is one of efficiency.

In shops and factories, as well as in public edifices, the departments of buildings should have the same right to regulate the number of men to be employed in a given space, as they have to say how many fire-escapes should be attached to a tenement. They and the Boards of Health should have the same right to regulate the crowding of people in tenements. It is inhuman, it is unnecessary, it is impolitic, that human beings should be condemned to the misery, squalor, and degradation of tenement-house life, as it is in our great cities.[2] Doctors know what summer in the tenements means to the babies—death or disease to the many. The political economists can perceive the embryo swarm of beggars, thieves and prostitutes among the survivors. Yet there is room enough and to spare. Even on Manhattan Island there is space sufficient to give every separate family in New

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[1] The legality and morality of such a procedure will be discussed in a future paper.

[2] See article on Tenement-house Morality, by Rev. J. O. S. Huntingdon, in "The Forum."

York City a house by themselves. But by the side of the five-story tenement is the vacant lot. The elevated railroad, stretching far out into the suburbs, has not made homes any easier for the poor to get. It has only increased the speculative price of land.

To protect its people, the State should prevent the holding of land not used. It could render it unprofitable to own land that was vacant by a system of land taxes.[3] This compelling the use of land by taxation would have a tendency to cause a wider distribution of population, and relieve many evils in that way. If, as Henry George claims (and I see no reason for doubting the statement) this reform in land-holding would largely improve the condition of the poor, a vast step towards the raising of the standard of vitality would be taken. Go into the city, wander through the portion inhabited by the poor, and you will realize, as you never did before, that the denial of the right to land is a denial of the right to life.[4] Last, but not least, comes the problem of individual life: To teach our sons and daughters the value of self-restraint, of temperance in all things, of the cultivation of both mind and body, of the worth of work, and the proper use of rest; to train them up into manly men and noble women.

For ourselves, we should endeavor as men to make the world a little wiser, a little better, a little purer for our having lived in it; as physicians, to have relieved some of its sufferings, to have prevented some of its diseases, to have pointed out the path of progress for a little way, and our task will be well performed.

SCHOOL HYGIENE.

BY D. F. LINCOLN, M. D., OF BOSTON, MASS.

(Continued from page 303.)

IV. SEWERAGE.

It is difficult to trace any large amount of disease in schools directly to offensive privies or sewers. There can be, however, no doubt that some is so caused. The school is often supplied with water from a contaminated well. Bad air and stenches are not always provocative of illness, but the common-sense of civilized races suspects them, and there is no doubt that they may promote debility, headache, loss of appetite and the digestive tone, and general depression of vitality; while in the minds of some physicians there is a doubt that dysentery may be caused, and perhaps typhoid fever, and that scarlatina and diphtheria may be aggravated by exposure to foul air. Pneumonia, tonsillitis, rheumatism and neuralgia are probably to be included.

Although drainage, as applied to school buildings, is governed by the general rules applicable elsewhere, it may yet be desirable to note, in passing, the chief of these rules. A certain number of points of more special application will be noticed afterwards.

In all houses, whether used for school purposes or not, the drain, soil, and waste pipes ought to be of iron, visible and accessible throughout their course, if possible; without angles, as straight as possible, and never horizontal. Soil and waste pipes are to be carried up full size, two feet above the house roof, and there guarded against the weather. A trap is to be provided for each sink, basin, urinal, or closet, and a running trap for the outlet of the drain, with an opening from the drain for ventilation just inside the trap. Safes are to be connected with the drain directly. Rain-water leaders are not to be used for any other purpose, and *vice versa.* The best trap for sinks is, perhaps, the ball trap. Ordinary S traps are often shallow, and are rather more easily siphoned than D traps. Traps are to be ventilated by 1½-inch pipe leading to the general ventilator (*i. e.*, the continuation of the soil or waste pipe) above all other inlets. If not ventilated, the omission must be made upon good authority. Bell traps are convenient for the floors of urinals, but they are rather inefficient unless the seal is made deeper than usual.

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[3] Tiedeman, "Limitation of Police Power;" article, "Land;" Sheldon Amos, "Science of Law;" also article, "Property in Land."

[4] "Progress and Poverty," by Henry George; "Social Statistics," by Herbert Spencer.

In many towns there is a supply of aqueduct water, but no public sewer. In this case the drain usually discharges into a cess-pool, loosely built, which permits the escape of fluids into the soil. This arrangement is satisfactory when there is a good deal of spare land, and when the soil is light and gravelly. In a clayey soil it may be entirely inadmissable. If the population is even moderately compact, sewers should be provided at once, under peril of infecting the subsoil air to such an extent as to influence the air of cellars. City schools are usually provided with water-closets proper, or with flush-tanks or iron latrines. In country schools the ordinary privy is almost universal. Good water-closets are doubtless the best arrangement, so long as they are kept in order. No kind yet invented is free from the danger of derangement. A hopper which gives a full and quick discharge of water is probably the best for schools. The discharge may be dependent on the movement of the door or seat, or may be arranged to occur at once in all the bowls at a given signal.

The flush-tank is a long vault of masonry, over which the seats are built. It should have a round bottom and rounded corners. At one end is a tap of water; at the other, in the bottom, a plug to let out the contents. The janitor should remove the plug, and flush and swab the interior at least once a day. With proper ventilation there need be no offensive odors. If placed in a well lighted cellar, it will give satisfaction as long as it is carefully attended to; but such is human nature, that we may expect to find a certain proportion of cases in which due care is not given, and consequently dissatisfaction is felt. There is a great difference of opinion among intelligent heads of schools upon this point, some being unwilling to tolerate these arrangements under the house-roof, while others are strong in support of them. On the whole, it seems better, if we cannot be sure of the future character of the service rendered, to place all of them out of doors. A flush-tank will not freeze in the climate of New York city if emptied at night. In colder places it may be necessary to empty not only the tank (which in any case should be always done,) but also the pipes leading to it, directly after school.

An unobjectionable apparatus consists of an iron sink coated inside with a firm glaze, rising to contact with the seats, and only deep enough to hold a few inches of water, with a suitable space above. There should be no riser. The whole should be above ground, in a place moderately warmed; the water to be drawn off daily, and in cold weather not replaced till the next day. For an out-of-doors sink, if iron is used it must not be supplemented by a wall of masonry built above it, as the contraction and expansion of the metal cause a breaking away from the masonry.

As regards freezing, the writer is informed by the superintendent of schools at Springfield, Mass., that it does not occur when the water is shut off from the out-door sinks and drawn off.

A school-house should have one water-closet in-doors, for the use of females. A building of two or more stories may properly have one on each story, in order to save girls the fatigue of climbing stairs in cases where the privilege is desired, and also for the teachers' use.

The urinal appears to present a difficult problem; but the whole matter lies in two words—non-absorbent surfaces and frequent cleaning. One of the best forms is composed entirely of slabs of slate, forming a wall five feet high, with a gutter at its foot. The gutter is cut in the floor-pieces on which the pupils stand. Upright slabs divide the space, in the interest of decency. Slate is almost impervious to moisture, and is made quite so by oiling with linseed oil. The apparatus in question is usually furnished with a perforated water-pipe, to keep the front surface of the stone moistened with a sheet of water. The idea is a good one but requires such exactness of mechanical work that the jets are rarely in perfect order. It has the further disadvantage of seeming to excuse a part of the duty of scrubbing. No portion—side, base, or back—should be neglected in this respect. All these surfaces are liable to grow foul. The amount of work needed to give thorough cleaning is considerable, but it is the only way to secure purity. The janitor's task ought to be lightened by having the whole floor of the apartment slope towards the gutter, so that the hose can be used freely. Some urinals have a raised platform, in order to define the place to stand on. The better way would be to have a depression, which would equally define the position. A monitor, in either case, should stand by to check irregular behavior.

All complication of structure in these departments should be avoided. Concealment of the basin of a water-closet by wood-work is not desirable, and the wooden seat should be so fitted that it can easily be removed for cleaning or renewal. The urinal needs no trough. It should be made of materials which are not porous; no metal work is admissible, for rust is sure to come, and the animal matter of the urine so saturates the rust that it can hardly be soaked out. Paint soon scales off from metal. Wood can be protected by paint for a time, and then becomes soaked with urine unless repainted. The writer has seen marble used—a material whose absorbent powers may be seen in the large slabs used in restaurants, depots, and such places.

Little need be said about the common privy attached to most country schools. In many cases this is the last thing attended to, It is practically outside of the teacher's supervision, and one can hardly blame a young and modest woman for failing to see that her duty lies in this direction. It is generally a first-class nuisance as regards odor, insupportable if placed within a convenient distance; but if set off fifty feet or so, the exposure which the pupils undergo in cold or wet weather is a serious matter. In perhaps one-half of the cases it is out of repair. The accumulations go on for a year at a time. Finally the walls are covered with dirty scrawls; and very commonly the girl's closet is contiguous to the boys', so that every thing is heard through the partition.

The remedy for a part of these troubles may be found in a more active interest on the part of the school trustee. He can have the place repaired, the scribbling effaced with a plane, and paint applied so as to give a thoroughly neat look. He should try to have both the teachers and the scholars coöperate in maintaining a high standard of neatness, securing, if possible, an occasional visit from the teacher, and making such himself, so as to insure that no breakage or injury goes unnoticed.

Most privies are too dark. Two closets in immediate contact do not insure a proper and modest degree of separation between the sexes: in such a case, the boys and girls should have recess at different times. If there are really two separate out-houses, it is well to have them, and the approaches to them, separated by a sufficient fence. There ought to be plank walks, or raised ways (paved, asphalted, gravelled), to enable the scholars to go dry-shod. But the plan which commends itself to the writer as by all means the best for country schools is the use of dry earth in vaults, emptied weekly, in a shed close to the school-house, and accessible by a short covered way. It may be thought best to retain the old style of privy for the boys, keeping it at a distance from the house as before; but for girls and little children it is most desirable to have a place which they can reach without danger to health.

(To be continued).

THE EFFECTS OF PRESENT EDUCATIONAL METHODS ON THE HEALTH OF WOMEN.*

By C. A. L. REED, M. D.,
of Cincinnati, Ohio.

In a practice of fourteen years devoted largely, and now exclusively, to treatment of the diseases of women, my attention has been attracted to the frequency with which a certain class of cases present themselves. A young girl of fourteen, of previously excellent health and good physique, begins to lose her appetite, has headache and indefinite pains all through her body, and in short has nervous exhaustion. She is ordered from school, given a complete change of surroundings, and returns quite restored. At sixteen she is fairly in the high school course; bright and precocious, she shows the mental and physical vigor with which she is endowed. But there comes a change. She begins to complain of pains low down in the back, and she has serious trouble each month. Soon the periodic function fails to appear, or is scantily performed, if at all. She has a slight cough, is pallid and worn in the mornings; but at this stage, or a little later, as evening approaches, a flush is again on her cheek, the light in her eye and the red again on her lips. These are but the evanescent play of colors on a ghastly background ; she is pronounced the victim of incipient consumption, taken from the school-room, and sent in search of the health forever lost.

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*Abstract of a paper read before the Ohio State Sanitary Association.

I could multiply the list of cases in which girls and women, pupils and teachers, have contracted diseases while in the discharge of their duties. It is the central fact in these cases, and others of which they are types, that they occur in individuals subjected to conditions and influences which obtain in ordinary school life. In endeavoring to analyze these conditions in causative relations to diseases such as have been indicated, it may be well to consider : (1) Some general questions in regard to school hygiene. (2) Some especial hygienic conditions which affect female pupils. (3) Some especial hygienic conditions which affect female teachers. (4) Some suggested remedies.

In a preliminary view of the subject as a whole, we are impressed with the idea that, whatever department of the topic we may look at, we behold a battle of contending forces ; those of the vitality of youth on the one side, and those of the unsanitary conditions surrounding them on the other. I shall therefore arrange these forces in a sort of credit and debit style, in a fancied physiological ledger, and, when I am through, will ask you to assist me in striking a balance.

The topic of general school hygiene is a very hackneyed one, and yet it is a theme of such urgent and present importance, that it should be fairly thundered at all times until a too heedless public gives ear to its teachings. In opening this account, we have first to put on the invoice a splendid bundle of potentiality in the form of youth. In this connection, youth implies expansive energy, a physiological impulse to growth and development, fortified with organisms to make that impetus sustained and effective.

In this country we can put down on the side of good conditions promotive of vitality, good food, warm clothing and comfortable abodes. The school age generally furnishes a child of fair endowments and surrounded with fair hygienic environments at home. It is entering an arena, however, where it is to encounter antagonistic influences. The school-house itself furnishes the first adverse element in the conflict. Within its walls the child sighs for the air which has placed the bloom upon her cheeks ; she pants to resist the oppressive heat ; the odors offend her yet untried olfactories.

In the next place she is subjected to the general unsanitary conditions, but the evil of stair-climbing is especially pernicious to her, because it is very probable that she presents a case of womb disease, provoked during her pupilage, and existing later at an advanced stage of development. I beg to protest against the rule requiring teachers to stand during school hours, and which, to my knowledge, is enforced in some schools. Blackboard exercise and chart demonstrations when long continued, work damage by placing the abdominal muscles on a tension, and thus inducing persistent downward pressure of the abdominal organs. There are, however, some cases of illness among teachers for which the school and school-work are unjustly blamed. The long hours before and after school are very tempting to the ambitious teacher to take some extra task. Some take up an outside study, as stenography, medicine, law or bookkeeping. Others become correspondents in law and other offices, having already done a day's work, and some self-sacrificing creatures are not uncommonly found doing the domestic work for an entire family, in addition to discharging the onerous duties of the school-room. Of course, the constitution breaks down under the double strain. I said the school system could not be blamed for these cases, but on second thought beg leave to recall the remark. The motive for taking extra work, particularly professional study is the hope to get into employment that has about it some certainty of continuity, and some prospect of reward. The uncertain tenure of position in the profession of a teacher, depending as it does upon the most fickle of all institutions, a political board, cannot but be a source of anxiety and discontent.

The public school system is by all odds the largest and most potent single instrumentality in the United States. It illumines more minds; irradiates more homes with the sunshine of intelligence; prolongs more lives, and fills more untimely graves than any other one power in the land. It is the purpose of progress to eliminate that which is evil and retain that which is good. I am aware the philosopher would say: "Hands off; this is a fight for the survival of the fittest, let Nature's laws have their sway."

This is wrong; the feeble minority have their rights and it is the business of the humanitarian to respect them, and to see that the conflict is a fair one. It is particularly the business of the aforesaid humanitarian to see that the feebler combatant in the arena be not placed at a disadvantage by man-made conditions. I would strip our school system of everything that is artificial and adventitious and bring it back to natural ways and natural methods. I would see that the curriculum of study was arranged with reference to the physiological synthesis of the mind. It should be remembered that a precept is the necessary antecedent of a rational concept. The senses should, therefore, be cultivated in an easy and gradual way, but I am not dealing so much with the psychical as the physical phase of these hygienic topics. Turning, therefore, to this side of the question, I would have the air free even to the school children. The greatest of all mental and cerebral stimulants is oxygen, and I would funish it to them in wholesome and generous quantities. It is preferable to generate the heat within the pupil than outside of her, and it is vastly more economical to use her lungs as a furnace, with pure air as a fuel, than the stove as a radiator and even natural gas as a combustible. It is a penny wise and pound foolish policy which prompts the saving of ground to such an extent in our cities, as to convert our temples of learning into veritable towers of Babel. But if from necessity they are built so lofty, girls of from 12 to 17 should never be called upon to climb the long flights of stairs.

The farce of stated final examinations should be done away with. That teacher is unworthy her calling who cannot, at the end of the year, indicate with accuracy and precision just which pupils are, and which are not, ready for promotion, and her dictum should be final. Published grades do more harm than good in the cases of sensitive girls of moderate capacity.

I beg leave to make another general criticism and suggest a general remedy which is of great importance. Our present school system, relying almost exclusively upon books as the media for the communication of knowledge, tends to develop the reflective centres rather than the perceptive faculties; and through the imposition of inordinate tasks, brings on an ultra-mental mood which is inimical to the physical welfare of the pupil. In the case of sensitive girls this wear and tear brings on a state which a scholarly friend of mine has aptly designated as one of "morbid subjectivity." The remedy which I would suggest is more attention to physical culture, not in our select schools and endowed colleges, but in public schools, the university of the people.

Do not think from what I have written that I take a gloomy view either of the present or of the future. On the contrary, I am a pronounced optimist on this as every other topic, and believe that the schools of to-day are better than those of any previous day; that the health of the school children is better, and that the teachers have a finer stamina. My present complaint is but a protest against the longer continuance of certain remaining evils viewed from my particular standpoint as a specialist in medical practice. These evils are less striking than they were, and I am happy to believe, are gradually receding before the new order of things. This new regime involves the adoption in our schools of the axiom that the successful man must first be a good animal; it involves recognition of the principle that education, to effect its true end, must develop co-ordinately the mental and physical organisms, if indeed they be capable of separate mention. Germany has gymnasiums established beside each school-house. Wellington said it was the manly sports of Eton that won the battle of Waterloo. If physical culture has had such an influence on history through the medium of men, what possibilities are not in store when the effort to influence the race is made through the more conservative organization of women? The Eastern colleges, Wellesley, Vassar, Brown and Smith, have excellent gymnasia, and I would that our Western colleges were following the example of their Eastern competitors. But my special plea on this occasion is that our common schools, through legislative enactment, come to the rescue of pupils who are now dying, the victims of defective educational methods. This can only be done by the imitation of the German example, the establishment of facilities for physical culture at each school-house. This will, at least, turn the attention of a rising generation toward an ideal manhood and womanhood, and start them on the road to the attainment of its realization.

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A Bushel of corn makes four gallons of whisky. It sells for $16 at retail. The Government gets $3.60, the farmer 40 cents, the railroad $1, the manufacturers $4, the vendor $7, and the drinker all that is left—delirium tremens.—*Havana Journal.*

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EDITORIAL.

ONE WAY TO IMPROVE OUR WATER SUPPLY.

The question of how to improve our water supply, that is, at present, agitating this city, is a question of universal interest, for it is but a matter of time when all the growing cities of our country that derive their water supply from neighboring rivers or streams will find themselves in exactly the same predicament that we now are in.

Fifty years ago, Schuylkill water was famous for its purity, and justly so. The vessel that put to sea with its water barrels filled with water from this river was truly fortunate, and the good quality of the Philadelphia water supply was legendary throughout the land. This was all as it should be. The Schuylkill River is largely made up of diluted mine water, rich in iron and sulphuric acid ; the head waters of the river are surrounded by coal mines, the water from which is being constantly discharged into the river, so that by the time it reached us, after a flow of many miles it was truly a tonic water devoid of all noxious properties. But things have changed, though, unfortunately, the perceptive faculties of many have not changed with them.

The mine water still flows into the Schuylkill, but during the past generation, small villages, located in the valley drained by this river have grown into populous towns and cities all pouring their drainage into this stream, so that it has become, unquestionably, but little better than a huge open sewer, and our citizens are in reality, drinking nothing better than diluted sewage. This is a sad and unwelcome statement to make, but it is gospel truth, and it is suicidal and homicidal folly to shut our eyes to the fact.

It is a mistake to put the blame for our continued neglect to improve our water supply upon the members of Councils, as some of our newspapers are doing. The blame really belongs to some members of our profession. Councils very truly say : "When the profession of medicine, to which we look for guidance in these matters, has reached the conclusion that our present water supply is not fit for use and should be abandoned, and when they are unanimously ready to recommend a better source of supply then does our time for action come to hand." And in this position they are right. We believe that the majority of physicians unquestionably and unqualifiedly condemn our present water supply ; but, unfortunately, there are a few able and prominent gentlemen, who advocate the opposite view. With a singular misinterpretation of facts they base their argument upon the fact that Philadelphia has an extremely low general death rate. So we have a very low *general* death rate, which, to our way of thinking, is mainly due to the fact that there is no city in this country and none, we believe, in the world, wherein the air space for each inhabitant is anything like so great as it is with us. We have none of the over-crowding so common in other cities, which is so provocative of disease. With only two-thirds the population of New York City, we have many thousands more houses than New York and Brooklyn combined. Here we eliminate one of the greatest causes of *general* mortality when we furnish abundance of air space. But when we look into our *special* mortality lists, we find that our death rate from Typhoid Fever is out of all proportion to our *general* rate, and that in this particular disease we compare unfavorably with the rest of the country. Here then we find that the mistake of those who argue in favor of our present water supply is that they fail to draw a distinction between our *general* and our Typhoid Fever death rate. No argument further than the Plymouth epidemic is needed to convince any unprejudiced mind that contaminated water is a prolific cause of Typhoid Fever.

But, unfortunately, we fear that our present water supply will always find some plausible champions in our ranks. An able mind can always make more notoriety for its owner when arrayed on the side of the minority, and some men love argument and opposition for its own sake alone, so that there will always be some who will defeat that unanimity of sentiment that must, we fear, precede action by Councils. We presume and assume that every intelligent and unbiassed individual, who has been reading the daily papers of late, and who reflects upon the situation must believe that our present water is dangerous to the health and lives of our citizens.

What then shall we do? We started out to suggest a remedy.

We recently clipped the following from a daily paper:

> "James Jester has sued the City of Baltimore, Md., for $1,000 damages, his household goods having been injured by the bursting of a water-pipe."

As we read, the thought was forced upon us that if an individual could sue a city because his household goods were damaged by the bursting of a water pipe, how much more right he would have to sue a city that supplied him with drinking water loaded with disease and death. Water is a necessity of life and no municipality has the moral right, at least, to allow poisoned water to be delivered to its citizens.

It is directly traceable to the criminal negligence of the authorities that the support of many families is carried off by Typhoid Fever, just as much so as though they allowed great holes in the streets, into which the unwary citizen might tumble at night.

We do not pretend to pass upon the legal merits of the question, but we would suggest to some of our leading lawyers that they should bring suits for damages against the city in the names of those who have been deprived of their "bread winners" by Typhoid Fever. The mass of expert testimony that could be adduced to convict the defendant would be simply overwhelming. Is our suggestion not worthy of a trial?

Just as the Pennsylvania Railroad finds it cheaper to annually spend thousands of dollars to prevent accidents than to pay the damages that would be assessed against them, were they less careful, so would our city find it cheaper to give us a pure water supply than to liquidate the verdicts that common sense men would be constantly rendering against it.

NOTES AND COMMENTS.

WHAT AILS THE MODERN GIRL?

A writer in *Harper's Bazar* makes a pretty close diagnosis for a layman, as to 'what ails the modern girl,' at least a good many of her. It is well deserving of record as an *indicatio causalis* in the disease which is so often the despair of the doctor. "The modern girl hardly knows what she wants, whether it is the higher education, an æsthetic wardrobe, love or fame. She plays tennis and progressive euchre, and flirts and does Kensington work and reads Herbert Spencer, and very often writes; she dabbles in music, and talks theosophy, and if there are more things in heaven and earth than are dreamed of in her philosophy, one questions what they can be. Withal, she is as restless as the wind. She does not love the quiet of home; she lives on excitement; she goes to Europe, to the springs, the mountains, the theatres, the receptions, if she can get there, or to the modiste; she can always fall back upon clothes as a diversion, and, when everything else fails, she has nervous prostration and a trained nurse. In fact, the chief trouble with the modern girl, be she rich or poor, is that she either does too much, keeps her nerves on the strain, and by and by goes to the other extreme, and does literally nothing but consume drugs, talk of her ills, and consult the Christian scientists; or she has no real interests, fritters away her time in shallow pursuits, becomes pessimistic and dyspeptic, dissatisfied with herself and all the world; cries and questions if life is worth living, and feels especially blue on holidays. The remedy for all this is, perhaps, an object in life; those who are well and unselfishly occupied do not question if life is worth living; they know it is; and whether they are busy in the shoe factory, behind a counter, at the fireside, in the kitchen or the dining-room, so long as they are busy and not shirking or reaching forward for something more congenial, and neglecting present duty, their minds are at rest and uninvaded by despondency. One of the best remedies for depression of spirits is the effort to bestow happiness; it has been known to prove effectual when all other methods have failed; when novels and new gowns and cod-liver oil and bovinine and bromide; when admiration and flattery are no more serviceable than an abracadabra or any heathen spell. Melancholy, or other ills of this nature are direct results of a too strong egotism; and an absorbing interest in others is a safe and agreeable medicine, and is usually the last thing a modern girl tries."

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All made of pure animal wool *throughout*, including lining and stiffening material, no unsanitary dyes are used.

Our goods cannot be bought through any other house in Philadelphia.

☞ **BEWARE OF IMITATIONS.** ☜

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PHILADELPHIA.

BLANK FORMS FOR REPORTING CONTAGIOUS DISEASES.

The following abstract from the third Annual Report of the State Board of Health of Maine contains blank forms that are very valuable. The Secretary thus writes:

"With the preceding circular to the local boards, there were sent a supply of Forms 1, 2, 3, 4, 6, 7, 8, 10, 11, 12, 13 and 14, samples of which are presented on the next few pages, and placards for diphtheria and scarlet fever.

[Form 1.]

REPORT OF CASES OF CONTAGIOUS DISEASES.

Maximum penalty for failure to report cases of Small-pox, Diphtheria, Scarlet Fever, Cholera, Typhus or Typhoid Fever, $50.00.

NAMES OF PATIENTS.	SEX.	AGE.	RESIDENCE.	DISEASE.

Places where children from these houses attend school..........

Where and how disease originated..........

☞ Report every case whether in same family or not.

☞ Send or mail this promptly to Sec. of Local Board of Health.

Name of person reporting,..........

P. O. address and date, ... 188....

Form 1 is for the convenience of physicians and householders in reporting cases of the contagious diseases to the local boards of health. Sections 10 and 13 of the public health act were printed on the back. Copies were sent to each local board and later to every physician in the State whose name is known to the Board.

Form 6 was distributed among the boards to enable them to call the attention of the public to the requirements of the law in regard to the reporting of the contagious diseases. It was printed in convenient form for posting:

[Form 6.]

NOTICE.

"An Act to establish Local Boards of Health and to protect the people of this State from Contagious Diseases" requires that the local board of health in each town shall promptly report cases of the infectious diseases to the State Board of Health, and further provides that householders and physicians shall within twenty-four hours give notice to the secretary of the local board of Health of the existence of cases of small-pox, diphtheria, scarlet fever, cholera, typhus, and typhoid fever.

For the restriction of these diseases within the narrowest possible limits, these measures are indispensable, and as such we feel that all good citizens will be glad to give us their cordial co-operation. We therefore give notice that we shall hold to account all persons who neglect or refuse to comply with these provisions of the law.

Blank forms for reporting cases of the infectious diseases will be supplied upon application to

....

Sec't. of Board of Health.

[Form 3.]

Notification of Infectious Diseases.

To the Teacher in..........

....

This is to notify you that

exists in the house of..........

on..........

You are therefore directed to exclude from your school and school-room all children and other persons living in such infected house, or who have called or visited at said house until such time as you may be notified by the Local Board of Health, or by the attending physician, that such persons may be safely re-admitted.

....
Sec't. of Local Board of Health.
....................................188

On the back of Form 3 were printed sections 12, 19 and 20.

Certificate of Readmission to School.

To the Teacher in..

....

This is to certify that the scholars from the house of Mr. ....

on ....

may now be re-admitted to your school, the proper precautions against the danger of transmitting infection having been taken.

....
Sec't. of Local Board of Health.

............................188 .

The following is the form of blank which has been in use in reporting outbreaks of contagious diseases to the State Board:

[Form 2.]

Report of Outbreak of a Disease Dangerous to Public Health.

To be mailed to the Secretary of the State Board of Health, Augusta, Maine, immediately on the occurrence of a first case of small-pox, diphtheria, scarlet fever, cholera, typhus or typhoid fever, or other disease dangerous to the public health.

To the Secretary of the State Board of Health:

Sir,—There has come to my knowledge a case of . . . .
(Name of Disease.)
in the . . . .
(Town, city or village.)
The first person sick is . . . .
a . . . . about . . . . . old,
(Male or female.) (Age.)
who was taken sick with this disease on the
. . . . . . day of . . . . 188 . The
(Month.)
number of cases which have already occurred is . . . .

The danger of the spreading of the disease from or into the jurisdiction of other boards of health is. . . . .
(Great, not great, etc.)
for the reason that . . . .
. . . .

Precautionary measures . . . . . .
(Will be taken, have been taken, or are suggested to the State Board of Health.)
. . . .
. . . . as follows:
. . . .

Signature, ...
. . . .
. . . .
(Whether Health Officer or Sec.)
. . . . , ... 188 .
(Post Office address.) (Date.)

(Please fill the blank spaces in this notice if possible, but having learned the name of the disease, do not delay sending the report in order to learn other facts provided for in this blank.—A. G. Y., Sec., State Board of Health.)

Form 7 shows the blank which is used in reporting to the State Board during the prevalence of an infectious disease:

[Form 7.]

WEEKLY REPORT DURING THE PREVALENCE OF A COMMUNICABLE DISEASE.*

To the Secretary of the State Board of Health, Augusta, Me.:

Sir:—The following is a report of all known cases of the diseases named below in the town of . . . State of Maine, during and at the close of the week ending Saturday
. . . . . , 188 .
(Date.)

Names of Diseases.†	Number of sick at last report.	During the week, Number.			No. sick at close of week
		took sick.	Recovered.	Died	
DIPHTHERIA. . .	. . . . . .	. . .	. . .	. . .	. . .
SCARLET FEVER	. . . . . .	. . .	. . .	. . .	. . .
SMALL POX. . . .	. . . . . .	. . .	. . .	. . .	. . .
TYPHOID FEVER	. . . . . .	. . .	. . .	. . .	. . .
†	. . . . . .	. . .	. . .	. . .	. . .
. . . .	. . . . . .	. . .	. . .	. . .	. . .
. . . .	. . . . . .	. . .	. . .	. . .	. . .

REMARKS ....
....

....

....

....

....

....
(Signature.)

....
(Health Officer or Secretary.)

....
(Post Office address.)

....
(Date of making this report.)

---

*The health officer or secretary of each local board of health in Maine is respectfully requested to forward a report on this blank to the secretary of the State Board of Health, Augusta, Maine, promptly after the close of each week during any portion of which a case of one of the diseases named in this report has been present within the jurisdiction of his board.

†Add to this list the name of such a disease as cholera, yellow fever, typhus fever, etc., whenever it occurs.

This is (?) not the last blank (Form 7) I have. Please mark out the superfluous word, if any, in the foregoing senteuce.

The following is the blank which is in use in making a final report of an infectious disease after the outbreak is over.

[FORM 8.]

SPECIAL FINAL REPORT RELATIVE TO A COMMUNICABLE DISEASE.

(*Do not fill out and return this until outbreak is over.*)

.................................., 188..........

To the Secretary of the State Board of Health, Augusta, Maine.

1. The disease about which this report is made is ....
(Name of Disease.)

2. The jurisdiction of which I am ....is the ....
Health Officer or Sec't.) (Town or City.)
of..................................Maine.
(Name of place.)

3. The source of contagion, and the mode of introduction of the disease into my jurisdiction were as follows :..................................

....

....

4. The first case occurred..................................,
(Date of first case.)
188.

5. The last occurred ....,
(Date of last case.)
188. .

6. In this outbreak there have been ....
(Number.)
cases in my jurisdiction.

7. From this disease in this outbreak there have been ....deaths in my jurisdiction.
(Number.)

8. At the present time there are..................
(Number.)
cases in my jurisdiction.

9. The disinfectants used were; For rooms, ...; for clothing,.......... ....; for discharges passed in the room,..................................; for contents of privy vault,..................................; for bodies of the dead,..................................

10. The quantity of sulphur burned was ....lbs., which was about............lbs. per thousand cubic feet of air space.

11. The methods of disinfection were;

....
(For clothing.)

....
[Discharges.]

....
[Rooms.]

....
[Contents of Privy.]

12. What rooms were disinfected?
All rooms in which sickness occurred? All rooms in house? The cellar? The garret?

13. For disinfecting contents of privy, how much fresh chloride of lime was used?

14. What other disinfectant and how much was used in the privy vault?

15. Were the patients kept isolated from other people except nurse and physician?

16. Fully describe how you isolated the patient, and other methods you may have taken to restrict the disease. In case of small-pox, please state all facts about vaccinations..

....

....

....

17 The evidence of success attending the efforts at restriction were :..................................

18. Remarks..
[Please communicate any facts observed which may be of public health interest.

....

....

Very respectfully,

....
[Name.]

....
[Health Officer or Secretary.]

The preventive management of the

infectious diseases, if to be carried out with much success, requires that all cases shall be promptly reported to the local board ; that there shall be a careful separation of the sick from the well until the patient has ceased to be a source of danger ; that the teachers and school authorities shall be promptly notified in regard to infected families and houses ; that infected pupils and persons from infected houses and places shall be excluded from the schools ; and finally that the places where danger exists in the form of infection shall be indicated to the public by means of some kind of signals or warnings upon the infected houses. The local boards of health are empowered and it is made their duty "to give public notice of infected places, by displaying red flags, or by posting placards on the entrances of the premises." The displaying of the red flag has, hitherto, in this State been held to indicate the presence of small-pox or cholera, and it would be well to reserve this form of signal for these imported scourges. A less sensational form of signal is a placard attached to the entrances of the infected houses, and this has been recommended to be used in connection with diphtheria and scarlet fever. Those sent to the local boards are printed on stout card-board about 6x8 inches.

NOTICE.

This house contains a case of

DIPHTHERIA.

When the danger from contagion has passed this card will be removed.

Per Order,
BOARD OF HEALTH.

Any person removing this card without authority is liable to a fine of Fifty Dollars.

This system of placarding infected places has gone into pretty general use in the State, and to the credit of our people it may be said that, so far as known, there has been no objection made to it. On the contrary, infected families have felt the advantage of being relieved of the necessity of warning persons who approached their houses, and of placing the responsibility upon the local board of closing their doors to unnecessary visitors. It is apparent that to the general public there is a very great advantage in having the places of danger marked so that they may be known by all.

A CHINESE PHYSICIAN.

The New York correspondent of the *Philadelphia Press* thus writes to that paper : Yen-Tszee Hing, whose title in Chinese corresponds to our M. D., but which is a trifle broader, including dentist, apothecary and chemist, is the leading Chinese physician in this country. He is a slender, bright-eyed, pleasant gentleman, rather undersized according to American notions, and about 45 years of age, and his principal practice is in New York. He has not adopted the American costume, but wears the flowing robes of his own country, of the richest texture and the brightest colors.

"I have very litle to do with American doctors," he said the other day, "and have never had much intercourse with them, for to one who was brought up as I was, many of their theories so far as medicine is concerned seem the rankest nonsense. In surgery and chemistry I am willing to, and cheerfully do acknowledge their superiority over us. The American surgeon, when he is well educated and takes pains to keep himself well up in his profession, knows more, I believe, than any other doctor in the world."

He was asked his opinion of the recent operation in which the cornea of a rabbit's eye was transplanted successfully.

Dr. Yen-Tszee Hing was amazed. "It is a most wonderful thing to do," he said, "and one that would never be dreamed of by our faculty. Our system of medicine, however," he continued, "is the result of the experience of our race for many thousand years. For example, 4000 years ago a shrewd observer in the North of China noticed that some of the domestic animals when troubled with certain stomach disorders ate eagerly of peppermint. He thereupon experimented with it and learned its value. Being a thrifty man, and seeing the value of the discovery, he converted his estate into a peppermint farm, and he and his children after him devoted themselves to the culture, preparation and sale of the plant. They furnished it in all ways—fresh, dried and pressed, in aqueous extracts, alcoholic extracts, oil, and the solidified oil which you call Menthol. It has been used ever since in cases of such internal diseases as colic, summer complaints, kidney troubles and some liver disorders. Externally it is used for neuralgia, rheumatism, tooth-ache, etc., and also for an antiseptic in dressing wounds."

"We have about the same theories and practice that you have about supplying the system with lime, iron, strychnine, quinine, beef, iron and wine, and the like, but there is this difference in our methods, that we go to nature directly for our standard remedies while you supply them from scientific preparations. This difference is due perhaps to our ignorance of chemistry, though we prefer to think that it is because we would rather go direct to nature for our medicines than to obtain them from artificial sources."

"American wits in their attempts to be funny at the expense of the Chinese have described a dyspeptic going to a Chinese doctor, who, after learning the symptoms, writes a number of hieroglyphics on a piece of paper, and after gravely burning the paper, makes the patient eat the ashes. The obvious inference is that the physician is employing a charm and pretending to heal by magic. As a matter of fact in these cases of dyspepsia or heartburn in which charcoal is the acknowledged remedy, we take a large sheet of cotton paper made for the purpose, and after rolling it up we burn it in a closed compartment in order to save as much as possible of the resultant charcoal, and give it to the patient to take in prescribed doses.

"Most American physicians," he continued, "are paid to keep their patients sick. In China we are paid to keep our patients well. The general rule among us is for the patient to pay a regular stipend to his physician while he is in health, and for this payment to cease entirely for the whole time the patient is sick. A large number of my patients pay me in this way, for we regard it as a sort of breach of contract for the physician to allow the patient to get sick. The system is a good one in some respects, and in other respects it is bad. On the one hand, a Chinese doctor very seldom gets rich, but, on the other hand, he never gets poor, as the American doctors too often do."

SOME FACTS CONCERNING THE PRESENT EPIDEMIC OF SMALL-POX IN THIS CITY.

Dr. Rebecca Fleisher, thus writes in the *Medical and Surgical Reporter:* "There is at the present time, as all are no doubt aware, an epidemic of small-pox in this city. The origin of contagious diseases is always interesting, and often instructive, even though the knowledge serves no other end than to demonstrate, over and over again, to a careless community, that the introduction of such diseases is, in almost all cases, preventable, even though their spread is not always so.

It may also stir up public sentiment in favor of increased exertion by health officers and others, that these may have the community supporting them, even if extreme efforts should seem imperative, in order to meet the end of protection to the city from a great calamity. But it is not only useful as general information and for public use, but the physician sees in the isolated cases, following each other successively, their utter and complete dependence on contagion to induce the disease, and thus, over and over again, is illustrated the characteristic history of epidemics, as to their origin, mode of dissemination, and course.

This epidemic originated from carelessness, in not recognizing an eruption possessed by a passenger on board of the steamship Lord Clive, from England, arriving here February 1, 1888. This eruption was noticed, but not diagnosticated, before he left the steamer. The passenger obtained board in the southern section of the city, remained there two weeks, and then went West. His soiled clothing was laundried by a woman in West Philadelphia, who later became ill with what the physician called *measles*; and it was only after she had been ill for a week that the true nature of the disease was recognized. She was then sent to the Municipal Hospital, where she died March 11. This woman's brother-in-law, living in the same house, had *varioloid;* these were the only persons in this district who were affected. On March 10, a new boarder at the house in which the passenger from the Lord Clive lodged was placed in the bed occupied by the emigrant, no change of bed-clothing having been made; this man became ill and was sent to the hospital. Later another boarder at the same house became ill, but desired to be nursed at his own home on Moyer Street, Thirty-first Ward, in the northern section of the city, and thus carried the disease there.

It was later learned that two other boarders in the Garrett Street house had varioloid, but the cases were not reported at the Health Office.

From March 11 to the 19, there was no death, but on this latter date a patient from St. Mary's Hospital died.

The rapidity of the spread of the

disease was not very great at first, although new cases were reported each day. The course of the spread has been erratic, beginning in the southern, then extending to the western, and then to the northern section of the city. The wards then in turn affected were the Twenty-sixth, Twenty-fourth, Thirty-first, Fourth, Eighteenth, Thirtieth, Third, and so on. The only wards, six in number, until now exempt, are the First, Sixth, Eleventh, Sixteenth, Twenty-first, and Twenty-second. The Second Ward heads the list with thirty reported cases, nine of these being in one house on Temple Street, near Twelth and Fitzwater. There was no doctor in attendance, and a relative, unconscious of the disease, reported at the Health Office the fact of a boy having been delirious for four days. On a visit to the house, seventeen people were found crowded in three rooms; twelve of the number were sent to the Municipal Hospital, although three of them did not develop the disease. Of the nine who were attacked with small-pox, four died.

The total number of cases reported until within a few days was 176; 81 of these were sent to the hospital; of this latter number, twelve died. Of the 95 treated in their own homes, seventeen died.

Without definite data as to the comparative severity of those two classes of cases, those treated at the hospital and those at home, and with so small a number from which to draw conclusions, it may nevertheless be interesting to note that of those treated in the hospital 14.8 per cent. proved fatal, while of those treated at home 17.8 died. Considering the disadvantages, in a mortality sense, of moving patients ill with any infectious disease, this certainly speaks well for the management of the hospital."

THE SANITARY MARRIAGE.

The day when true sanitary marriage will become the rule is a long way off, (says the *Boston Herald*). The need must be made more plainly evident. In this country we are developing, from the amalgamation of many strains, a race wholly new to the world. Our emigrants, as they intermarry with those who had preceded them, produce descendants of a quicker and more aggressive mental type than their own, and it is noted by Darwin that the bodies and limbs of these descendants are very noticeably longer than those of their ancestors. During our civil war the uniforms manufactured to fit the average American soldier—including those of foreign descent, though born here—were found, as a rule, to be much too long for foreigners just arrived.

When we shall have learned, and learned to apply, the laws of proper selection in marriage, our race ought to be second to none in health and physical development; and that means, also, intellectual advancement. A wide step toward the needed reform has been taken by us as a people, for far more than ever before are we interested in physical culture, upon which health so clearly depends. There is a promise that it will yet have the high place in the curriculum of education which it deserves.

Our schools now, on account of the absence of a proper system of physical culture, are constantly sending out into the world young men and young women who, by reason of their infirmities never ought to marry. And again, our ill-ventilated counting-rooms and factories are generating an army, the offspring of which must present every phase of bodily imperfection. The remedy for this is physical culture, and the sooner it is recognized by all, and particularly by our educators, the better. Social reformers and philanthropists have here a wide field for cultivation. Let them impress upon our growing youth the importance of healthy bodies, harmoniously developed by proper exercise.

Young women, perhaps even more than young men, need encouragement to strive to secure bodily perfection by proper exercise. They must realize that mere beauty of face, while it attracts and possibly excites the admiration of some, does not alone constitute true beauty, which can only be founded on perfect health.

Another thing which young ladies must remember: No matter how richly nature has endowed them with outward charms, they can retain them only as long as they enjoy good health. They may also be assured that beauty founded on perfect health continues even to old age. No one desires to see Spartanism revived in these times, but we may learn valuable lessons from it. The Spartans worshipped the beautiful and useful, and they took means to secure them. Bodily perfection was attained by enforced, well-appointed exercise. There were but few sickly men and women among them. None sickly were allowed to marry, and all in health were allowed to marry, and all in health were compelled to do so; if they refused they were punished. Bachelors after a certain age were shut out of the society of women, and once a year were shamed in public. Neither boys nor girls were allowed to marry before maturity was reached. This Spartan system of marriage, purely for the welfare of the state, continued for 500 years, and during that time there were produced a succession of the strongest and bravest men and the most healthy and beautiful women that the world has ever known.

There is a remarkable and self-imposed family law which popularly prevails, we are told, throughout Brazil in relation to matrimony. It is recognized among all the higher classes. The man who is about to marry is required to furnish a certificate from one or more physicians that he is free from diseases of a certain character, and that he is free also from all signs of any of the diseases which are liable to be transmitted to the offspring. Not only that, but the physicians consulted must testify that, as far as they can learn, there exists no reason to believe that the union will be other than in accord with the laws of sanitation.

DISINFECTING CLOTHES BY STEAM.

One of the busiest places in New York city (says the *Tribune*) in case of a serious epidemic of contagion, would be the ground floor of the Reception Hospital, in East Sixteenth street, for there is the new disinfecting apparatus of the Health Department. Experiments to ascertain the most practical method for using heat in the destruction of disease germs have been conducted there since last winter. A tank of boiler iron, big enough for a dozen men to walk about in at one time, and having a strong iron door at each end, is the chief part of the apparatus. It is connected with a furnace and steam boiler by means of pipes. The coils of pipes are close together inside the tank, and there is an arrangement of stop-cocks by which an operator can fill the tank with steam or dry heat at will. Dry air has been heated to a temperature of nearly 300 degrees inside the tank.

When the apparatus was built the Health Board expected to be able to disinfect clothing and bedding by dry heat.

Dr. Edson and the Health Commissioners believed that the spread of diphtheria and scarlet fever in the city might be checked if the department had means for the better disinfection of clothing and bedding. It was said that sulphur fumigation could not be depended on for the destruction of the germs of either disease in the clothing of patients and attendants. At the same time the Health Board could not compel the burning of bedding and clothing in the hundreds of cases of diphtheria and scarlet fever reported every month. Then there was the possibility that Asiatic cholera might come to the city and that the disinfection of clothing on a large scale might be imperative. It was believed that infected clothing could be placed in the new tank, subjected to dry heat for an hour or so and then removed uninjured and free from the germs of disease. Experiments were begun to ascertain how many degrees of heat could be employed to kill the germs and yet not destroy the clothes. The result has been a change from dry heat to steam.

It was found that a few strong fabrics which were placed in the tank dry and subjected to a dry heat of about 250°, came out purified and comparatively uninjured. An expensive carpet was ruined by exposure to 280° of heat in the tank for two hours. Another carpet, which had been left out in the blizzard and was partly frozen when it was placed in the tank, was subjected to a like test. Part of the carpet was burned up, while another portion was still frozen when it was removed from the tank. Subsequent experiments have shown that a roll of wet cloth may be subjected to intense dry heat several hours without being disinfected. It is believed that an envelope of steam protects the inner part of the roll from the heat.

By injecting live steam into the tank Dr. Edson's assistants have been able to disinfect clothing and bedding at a temperature of about 160°, and the goods come out of the tank unhurt, except that the colors in some kinds of cloth are effaced or badly mixed. The disinfection by steam is rapid and satisfactory. Iron cages are being prepared for the collection and return of bedding and clothing. Each cage has a lock to it, and the owners of clothing can keep the key while the goods are being disinfected. The work is done by the Health Department free of charge.

◆

YELLOW FEVER.—We have the authority of Dr. John Guitéras of the Marine Hospital Service, who is in charge of the Yellow Fever Refuge Station at Camp St. Mary for urging upon our readers the preparation for war in time of peace. Now that the country may well be in dread of a very general spread of this epidemic, is the time to speak to it. This is almost exclusively a railroad epidemic, and the increase of communication with the North, gives cause to fear a further extension than usual in that direction, if not this summer, the next. The hasty preparations and defences hurriedly made when an epidemic is announced, though the only thing possible under the circumstances, are of little, if any value to check the spread of the disease overland. What are $200,000 for a matter of this magnitude? Why should not the Health Department of the Government be as richly endowed as the Army or Navy? Why not have a standing army, and standing defences? It would be interesting to compare the expenditure of life and money that has been occasioned by the invasion of foreign foes with that of imported epidemics. There should be in Florida at least two permanent encampments with everything prepared for action, men fumigating trains, tents, provisions, drugs, etc. Everything to prevent the stampede of a town, like that of Tampa, which is the origin of the present epidemic. This stampede, repeated now in Jacksonville, is entirely unavoidable under the present circumstances. The disease was brought to Tampa by sea from Key West or Havana. This probably was avoidable with our present means. We should, however, be very slow in criticizing individual action, when our knowledge and our means are so meagre.

We should inaugurate a steady and systematic investigation of the pathogeny of the disease; not the spasmodic sending of commissions that have to waste more time in preparations than they can use in study. Dr. Guitéras' report to the Marine Hospital Service proves, he thinks, the susceptibility of tropical children to the disease, hence the wisdom in not allowing the moving backwards and forwards, without control, during the summer months of Cuban families, with baggage, furniture, bedding, etc., that is their traveling between Havana and Tampa and Key West without any restriction or supervision, as has been done heretofore under the supposition that all Cubans are *acclimated*, as it is called.

People with baggage coming from infected localities, during this epidemic should not be allowed to rush into Philadelphia without restrictions; there certainly is some danger. Suppose the disease breaks out in Savannah or Charleston, shall we allow the stampeders to crowd into *our* city? Dr. G. suggests three restrictions which should be announced before-hand. 1. People coming from infected localities should bring baggage subject to any kind of disinfection and treatment, and everything should either be boiled or immerse in bi-chloride solution and fumigate the trunks. 2. Such persons should be subject to a daily inspection for 10 days after their arrival. 3. They should be removed to small-pox hospital if they sicken. Something of this kind ought to be done.

OUR ENORMOUS TAXATION BY DIRT.

The cost of sickness and death, (says the *Sanitary Era*) that is paid in the United States to save the expense of purifying water, defecating waste, and sanitary policing in general is estimated, on the low basis of $750 as the cash value of a life to the community, at not less than $500,000,000 a year: two hundred millions for more than 250,000 persons slain by strictly preventable diseases, and three hundred millions for sickness constantly and necessarily disabling a million and a half at a net loss of at least $100 a year each, and a direct expense of as much more besides.

If any town would get at its own particular expense for dirt and sanitary neglect, a safe and convenient rule would usually be to compute eight dollars per head of population as a poll tax, if the death rate is a moderate one, say 15, or ten dollars a head where the average of about 18 is attained.

Dr. Arthur Ransome states that the records of the Friendly Societies of England show an average loss from sickness of 2.45 weeks per annum, for every working man from 21 to 70 years of age. But we have to include in our calculations the less prudent men who are not members of friendly societies, and we may therefore safely assume an average sickness of 2½ working weeks per annum. Taking only the heads of working class families in England and Wales, there are 4,259,259, whose weekly wages will amount to about $26,000,000; making $65,000,000 lost in work alone through sickness by the working men. The heads of working class families in Manchester and Salford are 92,593, whose weekly wages amount to about $100,000 for each day. Thus for every day that sickness can be diminished by public sanitary measures the authorities of Manchester and Salford will add to the wages of working men $100,000, with 25 per cent. more to the profits of employers and dealers.

The entire cost of the Manchester Health Department, including all the outlay upon hospitals, disinfection, scavenging, etc., was under $435,000 in the year ending March 31, 1885. The actual saving of life was 2,301 lives, about 1,000 of them between the ages of 20 and 70, or a gain of $1,000,000 at a rate of $1,000 per person. Add to this the saving for funeral expenses of about $75,000 and the gain of $250,000 that would have been spent on the treatment of 103,000 citizens preserved from sickness, and another $250,000 for the wages they must have earned, and then, at a very moderate computation, we have a gain of more than $1,500,000 to set against an expenditure of $435,000, a total profit of more than $1,000,000 in a single year.

THE INSANITARY CRANK.

Dr. J. L. Kaine, of Wisconsin, thus writes:—"No doubt independence in thinking is a good thing, even with present defective thinking machines; but it has its inconveniences. The American is relentlessly independent, and he is logical as far as his personal experience carries him. The trouble is that he makes his immediate experience the bases of a generalization. All the authorities from the creation down can't shake him if they conflict with his own limited experience.

Tell him there is death in sewer-gas, and he calls you a crank—for he has lived in an atmosphere which you have said was tainted, and yet where will you find a healthier man?

Tell him that to live near an open sewer, to breathe polluted air, to use water known to be contaminated by sewage, is injurious, and the same unquestionable experience will put you down.

Tell him that well water in cities is a fruitful source of disease, and he will show you hundreds who have used it for years with impunity.

"If filth, if what you call an insanitary condition, developes typhoid fever and diphtheria, and other virulent fermentive diseases, how is it that none of us about here, using of this water and breathing this polluted air, have these diseases? How is it that we are not all dead?"

The answer is that the seeds of these specific diseases are likely to be distributed by these agencies, and that persons are made more susceptible to their influence by unsanitary conditions. It is practically impossible, particularly in cities, to keep disease-germs out of the sewage. The march of typhoid fever germs has been traced a thousand times with as much certainty as the route of Sherman's march to the sea. A case of typhoid fever occurs in a town that has been free from it for years; the sanitary conditions are no worse than they have been for years, yet the disease spreads. The sewage is poured into a stream; a town twenty miles below uses the water of this stream for domestic purposes, and soon typhoid fever develops in this second town. Tell these people that the use of this water is responsible for this epidemic, and they reply that they have used it for years with impunity. There are towns in this country where typhoid fever has raged with frightful fatality, and the disease has been stayed only by a complete revolution in the matter of cess-pools and water supply, although years had elapsed during which cess-pools and water were harmless."

SEWER-AIR DISEASES.

A great deal of vague assertion has been made with regard to the effects of sewer-gas, or, as it is better called, sewer-air, upon the human system. While some look upon it as always poisonous and often virulent, others consider it usually harmless, though unpleasant. The good health of workmen engaged constantly upon sewers is cited in favor of this latter view.

Dr. Elias H. Bartley attempts, in a recent volume of Wood's "Reference Handbook," to treat the matter systematically (says the *Med. Record*), and he has made a very satisfactory contribution to a little understood, though much discussed, subject.

Sewer-air is defined as including the air of house drain-pipes, privy-vaults, cess-pools, and other imperfectly ventilated places containing decomposing animal and vegetable matters

Besides the gases sewer-air always contains bacteria and volatile organic matters, sometimes in large amount. The exact nature of these organic matters is not well understood. The gases making up sewer-air possess considerable diffusive power, and will pass easily through walls and porous earthenware or brick sewers. In this way these gases frequently find their way into the cellars of houses, especially in the vicinity of a broken sewer or improperly constructed cess-pool. Fungi readily grow in such air, and articles of food, such as meat or milk, soon become tainted and decompose when exposed to it. Experience has shown that stagnant sewage gives off more gas and is more dangerous than that which is kept in motion. Sewer-drains which have a steep grade are, therefore, to be preferred to those having a slight grade. Where sewers are frequently flushed with water, and where there is no chance for stagnation, with a reasonably good ventilation, the danger from sewer-air is reduced to a minimum.

There are very strong reasons for believing that the specific poisons, or germs, of a number of the contagious diseases may be transmitted by sewer-air. Dysentery, diarrhœa, the periodic fevers, typhoid, cholera, and yellow fever are among the diseases which may be conveyed by sewer-air.

The symptoms of chronic sewer-air poisoning are of two kinds: the specific and the non-specific. The specific symptoms are those which result from pathogenic microörganisms of various kinds suspended in the sewer-air and causing the various infectious diseases described.

Among the symptoms, when no specific disease-germs are at work, are malaise, loss of appetite, with dyspeptic symptoms, drowsiness, and slight feverishness. There is a marked tendency to anæmia and general debility. These symptoms are frequently grouped under the name of "malaria." In children, to these phenomena may be added a smooth or glazed, broad, flabby tongue, with a marked tendency to digestive trouble, as vomiting, diarrhœa, dysentery, and attacks of gastric catarrh and catarrhal tonsillitis.

The tendency of sewer-air poisoning is to derange the organs of primary assimilation rather than the lungs. Besides these effects, the debilitating influences of the polluted air render the persons so affected an easy prey to an intercurrent malady. Sewer-air is more likely to affect weakly and anæmic persons.

The treatment of chronic sewer-air poisoning is to remove the cause, secure a change of air, and use tonics and symptomatic remedies. The best specific is fresh air.

The methods of detecting sewer-air vary somewhat. On closing a room tightly for some hours and then going into it from the open air, a musty or oppressive odor is detected when sewer-air emanations from decomposing animal matters have found their way into it. If any circumstance should lead to the suspicion that sewer-gas is entering a room or house, it would be best to test the drain-pipes by the "smoke test" or the "oil-of-peppermint test."

A suspected joint in a sewer or drain-pipe may be tested by wrapping it with a single layer of white muslin, moistened with a solution of acetate of lead. As the gas escapes through the meshes of the cloth, it will be blackened by the sulphur compounds.

THE HOUSETOP AS A HEALTH RESORT.

The suggestion to utilize the roofs of city houses as a place of escape from the noise and unwholesome conditions of the street-level is by no means a new one (says the *Med. and Surg. Reporter*). It has been not only made before now, but also acted on; and several large cities have popular resorts high up above the level of the ground, and to be reached only by steam elevators. But, lately Dr. Gouverneur M. Smith, of New York, has proposed that the roofs of city houses shall be systematically occupied, for he sunlight and fresh air which can't be there obtained, and has urged the devising of some plan by which it can be made feasible.

This proposition is one which deserves attention. Unfortunately Dr. Smith makes no suggestion of a plan himself, and no plan has ever been suggested which is of general applicability in the climate of a large part of our country. So, it is hardly likely, we think, that the day will ever come when a city in the United States shall have its roofs comparable to those of the towns of Syria, which are sometimes called cities. But, we believe something is attainable in the direction of utilizing the roofs for obtaining the benefits of light and air. Access to the roof of every house ought to be as easy as access to any part of it—of course with proper safe-guards against accident to children. In fact the roof of a house ought to be a sort of a pavilion, with a covering which would admit light and exclude the storm in winter, and give free access to the air when the weather is warm. To secure these objects a costly structure would be needed, one with a covering made in part of strong glass, and immovable, so that the sunlight could pass freely through it in winter, and in part of some material light enough to be removed in summer, and strong enough to bear a load of snow in winter. To modify the roofs of many houses now built so that they would fit this description would be very costly; and to construct new houses with such roofs would put a hard strain upon buyers and renters of houses, most of whom cannot afford a larger investment than will furnish them living rooms enough. But we believe it to be not only practicable, but also very desirable for those who can go a little beyond their absolute necessities to make use of the opportunities for light and air which are afforded by their roofs. In winter they could be used as solariums, in summer as refuges from the heat, and in every season they might afford a most delightful place of recreation and amusement.

We commend this idea to the attention of our readers in the hope that some of them may be able to suggest a plan by which it can be carried out.

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DRINKING HABITS AND LONGEVITY.—The English alone seem to successfully prosecute the work of collective medical investigation (says the *Med. Record*). The most recent report is one prepared by Dr. Isambard Owen, on "The Connection of Disease with Habits of Intemperance." This report embraces an analysis of four thousand two hundred and thirty-four cases, contributed by one hundred and seventy-eight physicians. Each schedule gives the social position or occupation, age at death, and cause of death of the different persons.

They are also classified as regards their drinking habits into, A, total abstainers; B, habitually temperate or moderate systematic drinkers; C, careless drinkers; D, free drinkers; E, decidedly intemperate. When doubt existed as to which class a person belonged, he was placed between, under the head of AB, or BC, or CD, etc. The statistics collected furnished facts, first, as to the drinking habits of the different classes of society; second, as to the longevity of those who drink and those who do not; third, as to the cause of death.

The following is a summary of the conclusions given:

1. That habitual indulgence in alcoholic liquors beyond the most moderate amounts has a distinct tendency to shorten life, the average shortening being roughly proportional to the degree of indulgence.

2. That of men who have passed the age of twenty-five, the strictly temperate, on the average, live at least ten years longer than those who become decidedly intemperate. (We have not in these returns the means of coming to any conclusion as to the relative duration of life of total abstainers and habitually temperate drinkers of alcoholic liquors).

3. That in the production of liver disease and gout, alcoholic excess plays the very marked part which it has long been recognized as doing; and that there is no other disease anything like so distinctly traceable to the effects of alcoholic liquors.

4. That, liver disease and gout apart, the effect of alcoholic liquors is rather to predispose the body toward the attacks of disease generally than to induce any special disease.

3. That in the causation of chronic kidney disease. alcoholic excess, or the gout which it induces, probably plays a special part.

6. That there is no ground for the belief that alcoholic excess leads in any special manner to the development of malignant disease, and some reason to think that it may delay its production.

7. That in the young alcoholic liquors seem rather to check than to induce the formation of tubercle; while in the old there is some reason to believe that the effects are reversed.

8. That the tendency to apoplexy is not in any special manner induced by alcohol.

9. That the tendency to bronchitis, unless, perhaps, in the young, is not affected in any special manner by alcoholic excess.

10. That the mortality from pneumonia, and probably that from typhoid fever also, is not especially affected by alcoholic habits.

11. That prostatic enlargement and the tendency to inflammation of the bladder are not especially induced by alcoholic excess.

12. That total abstinence and habitual temperance augment considerably the chance of a death from old age or natural decay, without special disease.

As regards occupation and drinking habits, it appears that the most temperate classes are the professional, clerical and farming. The persons of most intemperate habits are licensed victuallers, drivers, soldiers, and domestic servants. The independent class rank low, showing that idleness begets intemperance.

YELLOW FEVER IN FLORIDA.

The following, from the *Weekly Abstract* of the Marine Hospital Service, gives the situation up to August 24th:

Ship Island Quarantine Station.—The medical officer in charge reports the arrival, August 13, of the American barkentine "Joe Read," from Havana via Apalachicola, Fla. "Her bill of health was foul, and her steward was left sick in Havana, with 'symptoms of yellow fever,' about four hours before she left that port."

Brownsville, Texas.—The Secretary of the Treasury received a telegram from the collector of customs, Brownsville, Tex., as follows:

August 14: "State health officer proclaimed quarantine against Matamoras yesterday, on account of arrival of cargo and passengers direct from Vera Cruz. No sickness known to be among passengers or on vessel. Customs officers at Brownsville, Santa Moria and Brazos have been instructed to assist State officers."

Cape Charles Quarantine Station.—Acting Assistant Surgeon Clarkson telegraphed:

August 18: "Sick seaman on steamship 'Athens,' died same day (August 17). Diagnosis not positive. No others sick. Will use every precaution. The vessel is now in quarantine."

Orlando and Sanford, Fla.—The mayor of Orlando and the mayor of Sanford telegraphed August 18, "there is no yellow fever in Orlando and Sanford or Orange County," and asked investigation, as their mails are threatened to be cut off.

Manatee, Fla.—Surgeon Murray teleghaphed:

August 18: "Manatee—total, 25 cases; none since 11th. Village fumigated, and bedding cleaned. Palmetto —1 case 15th; for 16th, 2; 17th, 2. No connection with Manatee cases. Restrictive measures adopted."

Tampa, Fla.—Dr. J. P. Wall telegraphed:

August 18: "Only 1 mild case since last report. Eleven cases in all, in 8 of which diagnosis positive. Three deaths with black vomit. Another fever, probably mild dengue, here. Only 1 case of yellow fever under treatment."

August 20: "Outlook better."

Jacksonville, Fla.—Dr. Neal Mitchell telegraphed:

August 17: "Official bulletin for 24 hours ending 6 P. M. New cases, 4—total number of cases to date, 32; total number of deaths to date, 4."

August 18: "Official bulletin for 24 hours ending 6 P. M. New case, 1; death, 1; recovered, 2; under treatment, 18; total number of cases to date, 33; total number of deaths to date, 5. Fever assuming a more severe type."

August 19: "Official bulletin for 24 hours ending 6 P. M. New cases, 5, one being an African; death, 1; under treatment, 22. Number of cases to date, 38; total number of deaths to date, 6."

August 23: "Official bulletin for 24 hours ending 6 P. M. New cases, 16; deaths, 2; recoveries, 2; under treatment, 43. Total number of cases to date, 70; total number of deaths to date, 10."

August 24: "Official bulletin for 24 hours ending 6 P. M. New cases, 14; deaths, 2; recoveries, 1; under treatment, 54. Total number of cases to date, 84; total number of deaths to date, 12."

Other places in Florida.—A sanitary inspection is now being conducted under the direction of this Bureau, with a view of obtaining definite information from other places in Florida, and removing, if possible, restrictions from places not infected.

THE DANGERS OF "PADDLING."—At almost any of the seaside resorts (says the *Medical Record*) numbers of children, usually little girls, may be seen, with their clothes tucked up around their hips, wading out as far as the length of their little legs will permit. It is a pastime in which they take great delight, and it seems really cruel to attempt to deprive them of it. Dr. Raven, however, has no such compassion for them, and writes to *The Lancet*, pointing out the danger to health in this sport. The water around the legs is cold, and the sun beating upon the head and trunk is hot, and the common result, this writer states, is a condition resembling heatstroke. The victim is feverished and restless, complaining of headache and nausea. The head is hot while the extremities are cold. Jactitation of the limbs is commonly seen, and vomiting is a frequent symptom. The conjunctivæ are congested, and there is intolerance of light and sound. Twice he has seen peritonitis brought about by this practice, and in several cases the symptoms attributed to "paddling" have been sufficiently serious to cause anxiety. It is surprising that, among so many offenders, there should be so few sufferers; but the symptoms in many cases, he suggests, may not be sufficiently severe to render the attendance of a medical man necessary. If the children must wade, as probably they will, Dr. Raven says that a degree of safety is insured by making the child leave the water frequently, and run about on the shore. The limbs thus become warm again, and some danger is avoided at the expense of the skin, which is apt to become inflamed and blistered by the sun. This, however, is a minor evil.

The treatment which he employs in cases of heatstroke from "paddling" is to make the patient paddle, as it were, at the other end. That is, to immerse the extremities in hot mustard and water, while douches of iced water are applied to the head. To relieve congestion of the internal organs, a brisk purge is generally needed.

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THE MARRIAGE OF YOUNG PEOPLE WITH HEART DISEASE.—The physician is often consulted (says the London correspondent of the *Medical Record*) on the propriety of marriage of young persons of either sex affected with heart disease. The question is rather a grave one to resolve and should not be lightly treated. According to some authors, all diseases of the heart in women should be a barrier to their marriage. Professor Jaccoud is not so absolute in his opinion on that point, and he distinguishes two groups of diseases of the heart which should more particularly have an influence on the settlement of the question. In a lecture on the subject the author stated that, in the first group the valvular disease, duly demonstrated by physical signs, has never produced any accidents. In these conditions, Dr. Jaccoud sees no valid reason to interdict the marriage, if the person interested desire it. In the second group, the lesion of the heart has already produced serious accidents, being confined more or less to the condition termed asystolic. Even then, there is no absolute rule. In a case like this, the physician must take into consideration the nature of the accidents caused anteriorly by the cardiopathy. If these accidents are pulmonary, he must be more severe than if it were simply an œdema or hepatic congestion. Moreover, he must consider how these accidents were borne by the patient, and how she recovered. One must also take into account the effect which the interdiction may produce on the person interested as to her desire or indifference to contract marriage. There is here a complex consideration, of which the non-medical elements should be taken into serious account. Finally, the conditions in which the woman would go through her pregnancy should be equally attended to. If she is obliged to work for her living, marriage in such case should be interdicted; if, on the contrary, she is in a position to avoid all fatigue and to rest as completely as is necessary, she may be authorized to marry.

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INHERITED DISEASES.—In the realm of disease, the facts of inheritance are most numerous, and are daily accumulating. Here they are no longer, alas, curious and amusing, but terrible, fateful, overwhelming. No fact of Nature is more pregnant with awful meaning than the fact of the inheritance of disease. It meets the physician on his daily rounds, paralyzing his art, and filling him with sadness. The legend of the ancient Greeks pictured the malignant Furies pursuing families from generation to generation, and rendering them desolate. The Furies still ply their work of terror and death; but we have stripped them of the garb which superstition threw around them, and they now appear to our eyes in the more intelligible but not less awful form of hereditary disease. Modern science, which has cast illumination into so many dark corners of Nature, has shed a new and still more lurid light on the words of the Hebrew Scripture: "The sins of the fathers shall be visited upon the children unto the third and fourth generation." Instances of hereditary disease abound on every hand. Fully fifty per cent of cases of gout are inherited. The proportion is not much less in that fell destroyer of families, our national scourge, consumption. Cancer and scrofula run strongly in families. Insanity is hereditary to a marked degree; but fortunately, like many other hereditary diseases, tends to wear itself out, the stock becoming extinct. Nearly all defects of sight are occasionally inherited. Sir Henry Howland says truly that "no organ or texture of the body is exempt from the chance of being the subject of hereditary disease." Probably most chronic diseases which permanently modify the structure and functions of the body are more or less liable to be inherited.

The important and far-reaching practical deductions from such facts—affecting so powerfully the happiness of individuals and families and the collective welfare of the nation—will be obvious to reflective minds, but cannot be dwelt upon in the present article.—*From "Curious Facts of Inheritance," in Popular Science Monthly for March.*

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UNSUCCESSFUL VACCINATION AND IMMUNITY AGAINST SMALL-POX.—Dr. Walter Reed, Assistant Surgeon U. S. Army, of Mt. Vernon Barracks, Ala., in reference to this question, reports the following case in the affirmative to the *Medical Record*. "During the summer of 1871, while an interne in the Kings County Hospital, Flatbush, L. I., I vividly recall the mental trepidation with which one of my fellow-internes looked forward to his month's service in the small-pox hospital, then a branch of the Kings County Hospital. This anxiety was due to the fact that he had again and again been unsuccessfully vaccinated, during childhood and adolescence, with both humanized and bovine virus. I remember that it was a subject of discussion among us whether, not being susceptible to the vaccine virus, he could acquire small-pox, and although the drift of opinion was against the probability of his taking the disease, this did not quiet the solicitude of the unsuccessful candidate for vaccination. Hence, to make matters doubly sure, during the month immediately preceding his service in the small-pox hospital he was several times very carefully vaccinated, but with negative results. All precautions having thus been taken, when the day arrived for Dr. —— to assume control of the small-pox wards he bravely 'faced the music,' as doctors always do, and was, therefore, for the period of one month daily, and, I might say, hourly, by the bedside of the most virulent cases of confluent and hemorrhagic small-pox *without acquiring the disease.* If any doubter believes that this individual's insusceptibility to vaccinia did not give him immunity against variola, I should be pleased to hear the explanation."

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Change of Air.—Dr. Alfred J. H. Crespi, of England, has written a very practical paper on the Change of Air as a Curative Agent. (*Vide Provincial Medical Journal*, April 2, 1888). After sketching agreeably the pleasure and profit of a change of air, he qualifies his eulogy of its power by saying that in order to be benefitted one must not put one's worries in one's hand bag and carry them about. Many persons who are "ordered" to the seashore or mountains, go there grumbling under protest, and spend the precious days of would-be recuperation in longing to get back to the duties that haunt them. This sort of a "change" is a mere farce, but often it is the only kind that is obtainable. People are too poor to count the outing as a pleasure; it is an expense over which they fret till the last vestige of benefit is worn away. On this account, the physician must beware of flippant advice to try the seashore and mountains when such a change may involve expenses which are hard to bear, and may lead only to heavier burdens thereafter. Unfortunately the people who are overworked—the middle classes—who with the tastes and aspirations of the rich, have only very limited means at command, are the very ones who most need a change and get it with the greatest difficulty. Before prescribing a change of air, it is well to estimate the labor involved in getting it—as to whether the effect of the tremendous effort necessary may not outweigh the results of the change.

In ordering change of air, it is wise not to promise too much. Do not pack people off to some distant clime, as some physicians do, because they do not know what to do with them. One ought to consider well before advising climatic changes in the case of a person presumably incurable. The excitement of a journey often hastens death in persons who are very low; and, if death ensues, it is very sad and inconvenient to the friends, and very prejudicial to the physician's fame. At best a change of air ought only to be *suggested*;

coercion does no good. If the patient don't want to go, has whims, fancies, and so on, let her be.

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CALISTHENIC EXERCISES FOR GIRLS—Calisthenic exercises, when conducted on scientific principles, are of great value in regulating the nerve centres; well coördinated series of movements imitated from the teacher, or produced to the word of command, tend to produce a well-knit nerve and muscular system responding with ease and gracefulness to impressions received through the eye and ear. The tendency to asymetry of postures, and ill-balanced positions of the head and spine, with excess of movement, is often pronounced in growing girls, especially those of hysterical temperament; such conditions may be checked and brought under control through the eye and ear. Quickness of brain action, and of the interaction of the senses and the hands, may be cultivated by exercises with balls. There is another advantage in such exercises, as the ball is thrown or caught by the child the eyes follow the moving object as it recedes or advances towards her, and thus the power of accomodating the vision is brought into play. In young and delicate girls great care is necessary in using in such exercises as throw great strain upon special groups of muscles, and in the use of exercises designed to regulate brain action, fatigue should be carefully avoided, and throughout the lesson the signs of weakness and exhaustion should be carefully looked for, so that the strain may not be injuriously prolonged. To conduct such exercises and training with success, especially in weakly children, requires special training and care in the teacher.—*British Medical Journal*, June 23.

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ACTIVITY OF THE SCARLET-FEVER POISON AFTER A YEAR.—Dr. J. Brooke, Surgeon U. S. Army, of Fort Monroe, Va., communicates the following case (says the *Med. Record*): "A girl aged about eight, living at this place, was some months ago attacked by scarlet fever, the disease running a typical course. For a long time no possible source of contagion could be discovered. The child had not been absent from home, had been with no one lately exposed, and no other case was known to exist anywhere in the vicinity. Subsequently I learned that one of the house-servants had nursed a case of scarlet fever in a distant city just about a year before. After the case terminated she packed some of her things, including some clothing then worn, in a trunk, and left the place. A year later she had the trunk sent to her here, opened it, and took out the contents, the little girl being present and handling the things. Very soon after the latter was attacked, as stated.

"As fixing the period of incubation, it would be interesting to know precisely how many days passed from the time the trunk was opened until the disease appeared; but I was unable to determine that period satisfactorily."

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THE CURABLE PERCENTAGE IN GENERAL PRACTICE.—It is often stated that nine-tenths of patients get well without any medicine, or whether the physician treats them or not. This is a small percentage of cures on the total of all kinds of cases that the physician sees. For example, the percentage of cures in general hospitals receiving acute cases is about ten, while the percentage of reported cures in dispensary practice is, we believe, much greater. Dr. J. R. Uhler, however, in the *Maryland Medical Journal*, who writes with such italicized emphasis, says:

"An examination of one medium-sized practice of medicine *shows* that there are 155 *common medical*, including the *self-limiting diseases*, and *for 56 of these* we *can do something*, either in the way of relief or cure, that is, *about* ⅓. Another practice *gives us* 242, with 68 *curable*, *equal to* 68–242, rather *nearer* ¼ *than* ⅓, not a flattering exhibit to be sure; and when the largest books are considered it will be probaby ⅓ or less, say 5–24, and *at this figure* we will *put it down*." Which all goes to show that *prevention* is more reliable than *cure*.

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Education for Duties to the Health.—*Harper's Bazar*, in making reference to the "higher education of girls," remarks: "In the first place, the art of life is the chief thing we have to learn at all, the art of living at life's best, of taking care of ourselves and of others; and with that as well what may be called the art of death, the art of smoothing the way of others to the grave when that way has been so directed to an inevitable close. How few of our girls are there who have any common-sense or any proper instruction as to the art of taking care of themselves. And quite as important as the care of their own health is it that they should know how to take care of that of others. If they are to become mothers, then there is the responsibility for the health of children to be placed on their consciences and their capacities, and not only of children, but of husband and servants also, and of all who are members of their household. And whether they become mothers or do not, they are probably already under obligations as daughters, sisters, nieces, and it is to be hoped friends, and in all of these relations they will have duties to perform when those ghastly visitants, sickness and death, arrive in their house or neighborhood."

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Tuberculosis Transmitted by the Milk of a Phthisical Cow.—A remarkable case has been recorded by Denune, of Berne, in which an infant became infected with tuberculosis through the milk which had been obtained from a tuberculous cow. The details of the case are as follows: An infant, four months old, belonging to a family whose history was absolutely negative in regard to tubercular affections, died of tuberculosis, a fact which was confirmed at the post-mortem examination. The child was fed with the milk of a cow which was especially kept for the purpose. The cow, for the purposes of examination and inquiry, was slaughtered, and a careful post-mortem made of its carcass. The left lung and pleura of the animal were found to be studded with tubercle, and in the tubercular nodules, bacilli were easily found. The milk was then submitted to a minute investigation, but bacteriological examination at first yielded negative results. Finally, however, tubercle bacilli were detected in portions of the liquid expressed from the deepest parts of the mammary gland.

CONSTITUENTS OF ATMOSPHERE.—Recent discoveries by English scientists with regard to atmosphereic constituents, and how to ascertain them, should be of great interest to all. The following are three of the more important tests: The test for carbonic acid consists in placing several two-gallon glass bottles side by side and filling them with air withdrawn from different parts of the room by means of India-rubber tubing. Into each bottle is then poured a small quantity of weak baryta water, which, acting upon the carbonic acid, gives rise to a dense-white precipitate of barium carbonate, easily separated by filtration and weight. The germ test is made by means of a glass tube, some two feet long by three inches in diameter, lined inside with a coating of transparent gelatine. A certain quantity of air is made to pass through the tube, and the germs deposit themselves upon the gelatine, where they can live and multiply, and where they may be distinguished and identified under the microscope. For the detection of organic matter, six large glass bottles are filled with distilled water, and are connected with each other by glass tubes. The air, made to pass through the whole series in a continuous stream by means of an inspirator, communicates to the liquid all the organic impurities with which it was charged, and, without visibly affecting its color, causes it to acquire a disagreeable smell.

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LET US HAVE A LITTLE FUN.—Fun? Why, of course, let us have all there is within reach, says the *New York Herald*. Life is as dry as dust to many people—getting up early, working hard all day, earning just enough to show how little a fellow can comfortably starve on—and if they can once in a while take the family to the circus, laugh in front of the monkey's cage, shiver when the lion roars, get out of the old routine of drudgery and tumble about in a lot of new sensations as a boy rolics over a stack of fresh hay, it will help to make the humdrum endurable· The truth is, we take things too seriously, are too glum, downhearted, rheumatic and crotchety, and need to be stirred up and refreshed by a sail down the bay, a visit to the theatre, a good look at a game of base ball, a picnic in the woods once in a while.

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WATER AND OBESITY.—A physician of Erlangen, Dr. Lorenzen, experimented with himself for the purpose of seeing the effects of imbibition of water upon the bodily weight. For four years he indulged in the not a,cetic task of drinking two gallons of beer daily, and discovered the remarkable fact that he had increased his weight seventy-eight pounds. On stopping the ingestion of water (beer) he reduced his weight fourteen pounds in seven days. Dr. Lorenzen's experiments are being performed daily by a large class of our esteemed Teutonic citizens.

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DR. LEDYARD'S TOAST.—It is told of old Dr. Isaac Ledyard, a notable character who flourished in Newtown a century or so ago, when there was a frequent passing of the social cup and much drinking of toasts, that when a sentiment or toast would be demanded of him, it was his wont to lift his glass and pledge the company in this guise: "Here, my friends, is your very good health, and that is most consumedly against me."—*Gaillard's Medical Journal.*

Exercise for School Children.—Physical exercise is a constant need of our bodies, and is not a curse. Pupils need it. Teachers need it. Pupils with habitually cold hands and feet need more exercise in the open air. Children should not sit or lie upon the damp ground. They should not sit or stand about when overheated, but keep moving or put on overcoats until they cool off. They should not stand still in cold winds. Dangerous games should be prohibited on the school grounds. Calisthenic and gymnastic exercises are needed in all schools to develop the body symmetrically and to make pupils easy in their movements. On cold days boys should not run out without their hats, nor girls without their wraps. In every way possible, the teacher should protect the children from contracting colds. Hence, sitting in draughts, lying on the damp ground, cooling off without coats on, sitting in wet or damp clothing, sitting still in cold rooms, standing in cold winds without hats, &c., &c., should receive constant attention on the part of the teachers.

◆

Alcohol.—Whatever it may have been formerly, says the London correspondent of the *Medical Record*, when very different views were held both by the profession and the public as to the action and value of alcohol, there can be no doubt that the opinion of the profession as a body is at the present day strongly in favor of the strictest temperance (by which I do not mean total abstinence) in the use of alcohol, both in health and disease. This is evidenced anew by a fresh medical declaration on the subject of alcohol and its prescription, which is being extensively circulated for signature. Similar documents were prepared and signed by many leading members of the profession in 1839, 1847 and 1871 respectively. In them, as in the present one, attention was drawn to the fact that alcohol is not a necessary article of diet for the healthy, that its value has been much exaggerated, and that it should be prescribed with great care whenever it was thought desirable to administer it.

◆

Our New Quarantine.—President Cleveland has signed the bill recently passed by Congress, perfecting the quarantine service. It provides punishment for any person trespassing upon any grounds belonging to any quarantine reservation or for any master, pilot, or owner of a vessel entering any port of the United States in violation of the law aiming to prevent the introduction of contagious or infectious diseases into the United States. It also establishes quarantine stations at the following named places: At the mouth of Delaware Bay, near Cape Charles; at the entrance of Chesapeake Bay; at Key West; in San Diego harbor; in San Francisco harbor, and at or near Port Townsend, Puget Sound. The bill appropriates $542,000 for the construction and maintenance of the above stations and for the maintenance of the Gulf quarantine (formerly Ship Island) $10,000.

◆

Nature Never Forgives Excesses.—The immature libertine, the spice-loving gourmand, the wine-bibber, all delude themselves with the hope of stealing a march on fortune; of anticipating her favors by enhancing the blessings of the certain present at the expense of an uncertain future. "The excesses of youth," says a British moralist, "are drafts on the health of old age, payable with heavy interest some twenty or thirty years after." But the truth is, that such mortgages are not only apt to be foreclosed, but that the extortion of the grievous interest is rarely postponed beyond the end of each day. For nature never fails to resent the insult by a depressing reaction, far more protracted than the abnormal exaltation, thus making the net result of the experiment a decrease, rather than an increase, of our normal share of happiness.

◆

The Correction of Deformities.—The older method of irons for the correction of weak ankles, bow-legs, etc., was, to say the least, a cumbersome, unhandy method and anything promising relief from the embarrassment which these irons always caused the sensitive wearer must surely find a warm welcome.

It is, therefore, with a feeling of doing good to our readers that we call their attention to the card of Mrs. V. M. Elliott (appearing in this journal) and that we recommend them to give her a call whenever they have any cases of weak ankles, bow-legs, or the like to treat. Mrs. Elliott is a reliable party and her shoes will accomplish the desired purpose without calling attention to the deformity, which is always so annoying to the victim.

◆

The New Quarantine Stations.—The Secretary of the Treasury has appointed the following Boards to select sites for quarantine stations under the provisions of the Quarantine Act of August 1 :—

At San Diego, Cal., Surgeon W. H. Lawtells, M. H. S., President; Captain John W. White, Revenue Marine Service; and Thomas J. Arnold, Collector of Customs, San Diego, Recorder.

At Key West, Fla., J. V. Harris, Collector of Customs, President; First Lieutenant W. D. Roath, R. M. S; and Eugene Wasden, Passed Assistant Surgeon, M. H. S., Recorder.

At Port Townsend, Washington Territory, Collector of Customs, President; Captain Russell Glover, R. M. S.; and A. H. Glennan, Passed Assistant Surgeon, M. H. S., Recorder.

◆

A Disinfectant of Air.—According to M. Keldyche, who has just published the results of a series of experiments on the air drawn from hospital wards, air which has been saturated with eucalyptol will no longer give rise to colonies of bacilli in gelatine. The spores of fungi are able to pass unharmed, but as their action on the higher animals is probably limited, it is not a matter of much importance. If confirmed by independent observation this valuable quality renders the drug worthy of wide-spread employment, for no other disinfectant is known which can be relied upon to effect its purpose without rendering the air irrespirable, besides acting very injuriously on furniture, clothes, etc.—*Medical Press.*

◆

A Marine Biological Laboratory has been completed at Plymouth, England, overlooking the Sound. The Marine Biological Association of the United Kingdom was founded "to promote accurate researches leading to the improvement of zoological and botanical science, and to an increase of knowledge as regards food, life-conditions, and habits of British food fishes and mollusks."

A Summer Drink for Children, proposed by Dr. Duchesne, of Paris, is the following: Glycyrrhizin, gr. xvi.; powdered sugar, gr. xvi.; bicarbonate of sodium, gr. xii.; crystallized quassine, gr. 1-200; oil of anise gtt ⅔. M. For oue powder. This quantity is to be disolved in one quart of water when wanted for use. The beverage costs about half a cent a quart.

◆

Infant Mortality.—The Italian statistician, Signor Bodie, has published some figures showing that ten per cent. of all infants in Europe die within the first month, twenty per cent. before the end of the first year, and thirty-three per cent. of the remainder during the first five years. Hardly seven children out of ten reach the completion of their sixth year.

◆

A Water Supply for Reading, Pa.—At a meeting of councils recently, an ordinance was introduced appropriating $150,000 to bring the waters of the Maiden Creek into the city. The point at which the stream is to be tapped is seven miles from the city and pipes are to be laid capable of carrying 8,000-000 gallons daily.

◆

BACK NUMBERS.

We will buy whole numbers 3, 9, 10, 11, 14 and 21. If any of our subscribers desire to part with these numbers, please send them in and we will remit the price.

◆

American Public Health Association.—The sixteenth annual session will be held in Milwaukee, Wis., November 20—23, inclusive. For special information, address Dr. Irving A. Watson, Secretary, etc., Concord, New Hampshire.

◆

The Margarine Act in England seems to have had a salutatory effect upou the adulteration of butter, for Mr. J. Carter Bell, the Cheshire County Analyst says that of fifty-one samples one only was adulterated.

◆

The German Public Health Society will hold its fourteenth meeting in Frankfort-on-the-Main on September 13 to 16, 1888.

STATE BOARD OF HEALTH
AND
VITAL STATISTICS,
OF THE
COMMONWEALTH OF PENNSYLVANIA.

OFFICERS AND MEMBERS.

PRESIDENT,
HON. DAVID ENGELMAN, M. D., of Easton.

SECRETARY,
BENJAMIN LEE, M. D., of Philadelphia.

MEMBERS,
PEMBERTON DUDLEY, M.D., of Philadelphia.
DAVID ENGELMAN, M. D., of Easton.
J. F. EDWARDS, M.D., of Philadelphia.
J. H. MCCLELLAND, M. D., of Pittsburg.
HOWARD MURPHY, C. E., of Philadelphia.
GEORGE G. GROFF, M.D., of Lewisburg.
BENJAMIN LEE, M. D., of Philadelphia.

PLACE OF MEETING,
Supreme Court Room, State Capitol, Harrisburg (unless otherwise ordered).

TIME OF MEETING,
Second Wednesday in May, July and Nov.

EXECUTIVE COMMITTEE,

PEMBERTON DUDLEY, M. D., Chairman.
HOWARD MURPHY, C. E.
JOSEPH F. EDWARDS, M. D.
BENJAMIN LEE, M. D., Secretary.

Place of Meeting,
(Until otherwisd ordered).
Executive Office, 1532 Pine St., Philad'a.

Time of Meeting,
Third Wednesdays in January, April, July and October.

Secretary's Address,
1532 Pine Street, Philadelphia.

Bureau of Registration and Vital Statistics.
Department of Internal Affairs,
State Capitol, Harrisburg.

State Superintendent of Registration of Vital Statistics.
BENJAMIN LEE, M. D.

SPECIAL REPORTS.

ABSTRACT OF MINUTES OF THE TENTH REGULAR MEETING OF THE STATE BOARD OF HEALTH OF PENNSYLVANIA.

The Tenth Regular Meeting of the State Board of Health was held at the Supreme Court Room, State Capitol, Harrisburg, July 11th at 3 P. M. Present—Mr. Murphy, and Drs. McClelland, Dudley, Groff and Lee. In the absence of the President, Mr. Murphy was called to the chair.

The Secretary read a telegram from Dr. Edwards, announcing that he would be present at the evening session.

The minutes of the Ninth Regular Meeting held at Lewisburg, May 16th, 17th and 18th and adjourned to Philadelphia to meet at the Executive Office, June 6th, were read and approved. President Engelman having now arrived assumed the chair. The Secretary introduced Dr. R. L. Sibbet, Medical Inspector of the Cumberland District and moved that he be invited to be present and participate in the discussions of the Board. It was carried. The order of business prepared by the Secretary was then formally adopted. The Secretary stated that he had taken the liberty of requesting Mr. Thos. J. Edge, Secretary of the State Board of Agriculture to be preent at this Session in order to participate in the discussion of the subject of Glanders, and asked permission to introduce him. This was unanimously accorded and the Honorable Secretary was invited to a seat beside the President.

The Secretary then presented his report embracing the following items:

1. Report on Glanders in Monroe County, by the Secretary and Charles McIntire Jr., M. D., Medical Inspector of the Lehigh District, showing that six cases of Glanders (five horses and one mule) had been discovered by the inspections of Dr. Bridge, State Veterinary Surgeon, and Dr. Huidekoper, Consulting State Veterinary Surgeon. The correspondence, which was quite voluminous, included the reports of Drs. Bridge and Huidekoper and letters from Secretary Edge, his Excellency Governor Beaver, the Honorable, the Attorney General of the State, and Medical Inspector McIntire, and urged the importance of stamping out the disease as rapidly as possible, consistently with justice to the owners of the animals. The report was accepted and referred for publication with such of the correspondence as the Secretary might deem of interest and importance. Mr. Secretary Edge being called upon to express his views on the subject of the suppression of the contagious diseases of animals, gave a detailed and interesting account of the prevalence of Glanders, Pleuro-pneumonia and Tuberculosis, in the course of which he cited an instance in which Glanders had been communicated to a young girl in Delaware County, in this State, within the last two years, from a mule which she undertook to treat in defiance of the instructions of the State Veterinarian that the animal should be killed. The disease was excruciatingly painful and she died in great agony. The ability of his Board to cope with this disease was limited only by the meagre character of its appropriation. The Attorney General had no doubt that it possessed the requisite authority, but his own conviction was that the State should not destroy property which it was not ready to compensate the owner for. In the matter of Pleuro-pneumonia, it was now, with the coöperation of the Bureau of Animal Industry, making a searching inspection of the city of Philadelphia and the surrounding country, upwards of twenty thousand cattle having been already tagged. Whenever a diseased animal was found, the entire herd was condemned and slaughtered. Tuberculosis was found to be wide-spread and rapidly on the increase, especially among fancy cattle. He considered that it presented the most serious of all problems for the sanitarian. On motion of Dr. Mc Clelland the report of Dr. J. R. Thompson, Medical Inspector of the Allegheny District, on cases of supposed glanders in Pittsburgh was called up out of its turn that it might be considered in connection with the preceding. This showed that there had probably been a mistake in diagnosis and that the animals suspected were suffering from Influenza. The report was accepted and referred.

Dr. McClelland then offered the following resolutions:

Resolved: That it is inexpedient for this Board to take separate action in reference to the suppression of contagious diseases among cattle, but that it will, to the full extent of its powers, coöperate with the State Board of Agriculture in its actions for this purpose, and also in endeavoring to secure appropriate legislation touching the subject. It was adopted. The thanks of the Board were tendered to Secretary Edge for his interesting and instructive remarks.

2. Report on Small-Pox in Philadelphia, by the Secretary, showing that since the last regular meeting of the Board in May, one hundred and eleven cases and twenty-eight deaths had occurred and indicating the necessity for increased precautions, if an epidemic of serious proportions is to be warded off during the coming winter. Accepted and referred.

3. Report of an Inspection of the Quarantine Stations of the Middle Atlantic Coast, by Benjamin Lee, M. D., Secretary, indicating the necessity for increased provision for Quarantine establishments at all points. Accepted and referred.

4. Report of an outbreak of Diphtheria in Brecknock Township, Lancaster County, by Paul A. Hartman, M. D., Medical Inspector of the Susquehanna District. The report showed that absolutely no precautions had been taken to prevent the spread of the infection. An exceedingly filthy slaughter-house stands within fifty feet of one of the infected houses and within twenty-five feet of a public school. The report declares the said slaughter-house to be a nuisance prejudicial to the public health. The finding of the report was sustained and the report accepted and referred.

5. Glanders in Pittsburgh had been already disposed of under item number one.

6. Pollution of wells at Chadd's Ford, reported by Dr. H. Hayward. Typhoid Fever prevailed in the neighborhood and was attributed to the use of this water. The Secretary had requested Dr. Charles M. Cresson to make an analysis of the water from two wells, forwarded by Dr. Hayward. One proved to be sufficiently pure, the other to contain Nitrates in sufficient quantity to condemn it. Accepted and referred.

7. Instructions from the Secretary to James L. Lenahan, Esq., District Attorney of Luzerne County *in re* Schooley Shaft. Accepted and ordered for publication.

8. Application of the Council of Brownsville for the enforcement of the Model Ordinance in their Borough by the State Board made through Medical Inspector Gummert. The Report was accepted but the concession asked for was not granted.

9. The Secretary reported the number of Circulars distributed since the last meeting of the Board to have been 17,177, of Regulations 92, of Forms 907, making a total of documents distributed of 18,176.

10. The Secretary announced that the Second Annual Report, constituting a volume of over one thousand pages is now printed, and will go into the hands of the binder in the course of the next week. The Third Annual Report would be immediately handed to the State Printer and be urged through the press with all possible speed.

11. The Secretary presented accounts audited and approved by the Executive, Committee, including vouchers No. 221 to No. 228 and amounting to $266.35. They were ordered to be paid.

Reports of Standing Committees being in order, Dr. Pemberton Dudley, Chairman of the Executive Committee, reported that since the last meeting of the Board two special meetings had been called, one at the Executive

Office, June 26th, 1888 at which vouchers No. 208 to No. 220, were audited and approved amounting to $869.22, and one at the Supreme Court Room, Harrisburg, July 11th, 1888, at which vouchers No. 221 to No. 228, were audited and approved, amounting to $266,35. The report was accepted and referred.

The Committee on Registration, Dr. Benjamin Lee, Chairman, reported progress. He called upon Dr. Sibbet, the father of Medical Registration in this State to give his views on the general question of registration. Dr. Sibbet considered that so far as the Registration of Practitioners of Medicine and Surgery went, the objects of the Act would be assisted materially by the establishment of a Board of Medical Examiners irrespective of Schools and entirely independent of Colleges. An informal discussion of much interest followed, participated in by all the members, bearing especially upon the character of legislation needed to enable the Board to carry out the objects of its formation so far as they relate to the Registration of Vital Statistics.

The Board then on motion took a recess until 9 P. M.

SECOND SESSION.

At 9 P. M. the Board reassembled at the Bolton House, all the members present and the President in the chair.

The Committee on Water Supply etc., Mr. H. Murphy, Chairman, reported that both in the case of the Norristown Hospital and the Altoona drainage system the Committe had been waiting until streams were at the lowest level in order to determine more accurately the nature and causes of the noxious conditions. The Report was accepted. The remaining Standing Committees reported progress. The Committee on Sanitary Legislation was instructed to endeavor to secure the appointment in each branch of the Legislature of a Standing Committee on Public Health, at the earliest possible moment in the next session of that body.

The election of a President for the ensuing year being in order, Dr. David Engelman of Easton was nominated for a second term and the nominations were closed. The Secretary was instructed to cast a single ballot for Dr. Engelman in the name of the Board, which was done and Dr. Engelman was declared elected.

Under the head of New Business the Secretary was instructed to prepare a note to the physicians of the State, requesting their coöperation in the work of preventing the spread of contagious diseases, particularly by preventing children from infected dwellings, from returning to school until all danger from infection has passed, and by giving detailed and explicit directions as to modes of disinfecting apartments, clothing, etc.

On motion, it was

Resolved, That the meeting in May, 1889, be held in the city of Pittsburgh, and that a State Sanitary Convention be held in connection with that meeting.

On motion the Board then adjourned, *sine die*.

BENJAMIN LEE, M. D.,
Secretary.

Dr. ARTHUR V. MEIGS, of Philadelphia,
Physician to the Pennsylvania Hospital and to the Children's Hospital, Author of "Milk Analysis and Infant Feeding," says in a paper on "Dietetic Management of the Summer Diarrhœa of Infants," published in the PHILADELPHIA MEDICAL NEWS, July 7th, 1888:

"Of all the baby foods that are manufactured, the only one that has given me such results as to encourage me to persevere in its use for any great length of time and to recommend it extensively is MELLIN'S FOOD."

THE ANNALS OF HYGIENE.

VOL. 3. PHILADELPHIA, OCTOBER 1, 1888. NO. 10.

COMMUNICATIONS.

SOME FACTS OF PHYSIOLOGY AND THE VENTILATION PROBLEM.

BY THOMAS HUBBARD, M. D.,
OF TOLEDO, OHIO.

The field for instruction in sanitary science, in as far as it pertains to our daily life, is to protect society from the deleterious influences that seem to go hand-in-hand with civilization and altered environment. By altered environment is meant, any change in those immediate and remote surroundings that have been, directly or indirectly, factors in making us what we are physically. It may be favorable to be sure, but we are concerned only with those features, remediable to a great extent, that militate against the health of the individual.

Aggregation into very large and compact communities in this age of "city building," is the source of very many problems that demand solution from the sanitarians of the day. To meet the deleterious influences consequent upon crowding becomes their duty. In fact, this still youthful servant of humanity has shown such precocity of late, that there is a tendency toward shifting the whole burden of reform, in all departments pertaining to the physical welfare of the people, on to its immature shoulders, and to such an extent that common-sense and our common senses as well, are restrained and unheeded in their expressions. And, since the circle of hygienic rules is necessarily far from complete, and even conflicting in many features, and even these are heeded only as they are convenient, the result upon the physical welfare of the people is disastrous.

Hygienic rules should not supplant individual judgment, but should, in a natural state of affairs, reinforce the decisions of our inborn preservative faculties. In the individual who has these faculties unperverted, and indeed they may be cultivated and their function for good increased, sound hygienic rules should merely sustain and explain the decisions that come from his innermost being. But this is an age in which the tendency is toward a perversion of such preservative faculties in favor of a kind of pseudo-scientific reasoning, and merely transient pleasurable sensations and personal convenience, which process may, and, too often does, lead to actual suppression of the function.

Let us consider in detail one of the most flagrant evils that is persistently working for destruction. *The breathing of impure air* is undermining the constitutions of all but the most vigorous, and sending many a valuable life to an early grave.

The tendency is toward charging sanitary science with the entire burden of the reform. It must not only educate the people up to *demanding* a reform, but must also specify the remedy in all its details; formulate specific rules and throw around the unwilling individual an unsurmountable barrier for his self-preservation. *When scientific reasoning shall successfully supplant the natural preservative faculties by specific rules of conduct, then will it have reached a stage bordering on omniscience.* The *demand* must come from within, and then will the reform have received its greatest impetus.

But, the evil already exists. Individual demand does not exist. Hence the duty of sanitarians is clearly to institute such conditions as will tend to recreate the demand in all of its natural vigor, by restoring to the individual his natural inheritance in the form of unperverted, or even cultivated preservative faculties. From infancy the average child is taught to ignore many of its own natural judgments instead of having them carefully nurtured. This process ultimately leads to complete suppression of certain functions, and then is nature's defence against the inroads of unhygienic conduct more or less destroyed. What is the encouragement to be given toward restoring to a natural state such a misguided individual, and what the process?

Is not every person endowed with faculties that are adequately capable of giving timely warning against this insidious enemy of health? Is it in keeping with the teachings of biology that there should be no inherent safeguard against the pernicious influence of breathing impure air? The very fact that there *has been* progress from a lower to a higher level of existence in ages past, answers unqualifiedly that such a preservative faculty *has been* a factor for good influence.

It is remarkable that the teachings of the chemist and physiologist should so thoroughly harmonize on this point; the one instructing us in the character of our surroundings, and the other interpreting the processes and functions of the body.

It is agreed by authorities that 1.0 parts of pure carbonic acid gas per 1000. parts of air can be endured by the system without harm, and can scarcely be detected in any way by the senses. But 1.0 parts of carbonic acid as an index of the impurity of respired air indicates that such air is quite unwholesome, and furthermore, the senses are able to recognize and give warning against the breathing of such air. In fact, according to an elaborate series of experiments by Dr. De Chaumont, the senses, under favoring circumstances, can detect a degree of *respiratory impurity* amounting to 0.4 parts of carbonic acid gas per 1000., making the total impurity (considering atmospheric carbonic acid as 0.4 per 1000.), 0.8 parts carbonic acid per 1000. Such an atmosphere is probably wholesome, if only to be endured for a reasonable time, and for healthy individuals. The sick and convalescent demand a higher grade of purity than this.

But, it may be urged, the poisonous constituents of expired air are doubtless of nitrogenous character, and the law of diffusion of gases may not apply to them, so that, while the quantity of carbonic acid does not rise above the accepted limit of wholesomeness, yet the quantity of the real poisonous elements (ptomaines so called), may be accumulating in the room. This is doubtless what does take place in rooms where ordinary diffusion is depended on as a means of ventilating, hence we are impressed with the efficiency of such systems as establish definite and reliable currents of outgoing air, thus aiding in a more or less mechanical way to relieve the air of the room of its most poisonous elements. The function of the sense of smell lies directly in this line. It does not take cognizance of the quantity of carbonic acid, a comparatively harmless constituent, but of the nitrogenous elements, thus warning us of the real danger, even when the chemist may pronounce in favor of such an air, he being compelled to depend on carbonic acid as his index of impurity. There will doubtless soon be discovered reliable methods for determining accurately the quantity of ptomaines present, thus corroborating the statement earlier made, that *sound hygienic teaching will ever tend to confirm the pointings of those innate faculties with which we are endowed for preservation and improvement.*

As previously stated, the majority of people have lost to themselves the benefits of this function by ignoring it, and from very lack of use it has become merely rudimentary. I refer to the sense of smell, especially with reference to its capacity for detecting low per cents. of respiratory impurity. This sense is supplemented by a more profound and influential one that may be said to come from all nerve-centres demanding a supply of pure blood. The sense of smell is of course dulled by constant contact with the same odors until revived by a remission. But this deeper impression is, in natural individuals, more persistent in its warnings, and adds an actual increasing discomfort that compels recognition. It is true that this sense (if it may be so called), can be, and has been, in the majority, suppressed, and while the nerve-centres may be greatly depressed, yet, in such a depraved individual, there is no consciousness of it, and thus this function may be said to be virtually lost to him.

To this unnatural state are most of the children being brought by the indifference of those caring for their home and school life. Fortunately, in spite of the fact that a general demand for reform may not exist, the foundation for a most thorough correction of the evil may be instituted through the action of sagacious school-boards, and, to the harmonious efforts of such men, seconding the labors of the sanitary engineer and architect, the public will ever owe an increasing debt of gratitude. They are doing a service to generations yet to come. They are eradicating the root of great evil and restoring the individual *to his senses*, so to speak, thus *creating a demand* that will make itself to be heeded, and lift humanity to a still higher level of existence; both mental and moral advancement being consequent upon physical improvement. By the adoption of a compulsory system of education the State assumes the guardianship of the schools. Hence the element of *duty* on the part of the State is introduced into this problem. Further, *this is true education*; training the higher senses of the growing child and restoring to it those natural inherited faculties that tend to preserve.

The child that lives throughout the day in a wholesome school-room atmosphere, with intervals of exhilarating exercise in the open air, will not tolerate without some kind of remonstrance the close atmosphere so apt to be found in living-rooms at home, and the evils ascribed to the forcing system of education would loose much of their influence. Quite the contrary with the child who has for a long or shorter period inured itself to existing in an atmosphere poisoned by respiratory products. The system will, strange to say, demand a continuance of such surroundings, and an elevation of temperature to make up for the lowered vitality of the tissues. Who has not experienced such a morbid craving? The shivering walk homeward on a cold day from the ill-ventilated, over-heated school-rooms, and the sense of temporary relief on again entering a similar atmosphere. Contrast with that state the child coming from a well-ventilated and suitably warmed room. The system is ready to meet the suddenly lowered temperature by the expenditure of some of the reserve fund of heat producing elements that are stored up during moments of (bodily) repose in a wholesome atmosphere. The healthy glow of the cheek and springing step are but expressions of a state of physical exhilaration, and assert more than the mere triumph (of the body) over the elements; it bespeaks a reserve fund of energy. The demands put forward by this individual are supreme. All nature is on his side. If unhampered by perverting and degenerating social influences, his requirements for wholesome surroundings must be lived up to by his associates. He, in full possession of all of his natural preservative faculties, and trained to heed their slightest warning, needs no chemist to tell him the per cent. of carbonic acid gas in the surrounding atmosphere; and indeed, were it within the scope of this paper, it would be shown that many other functions that are for preservation and physical and mental advancement, would necessarily be exalted in their influence for good. Unwholesome surroundings, with especial reference to the air we breathe, engender a morbid appetite, and encourage that bane of modern society and its train of evils, sedentariness. Educate and cultivate the natural preservative instincts by wholesome surroundings during the period of adolescense, and you will have inestimably bettered the moral status. The demands of the body would not longer tend to drag down morality, but would strengthen or even uplift it.

It may be truly asserted that instructors in hygiene, in all of its departments, do permanent good just in proportion as they stimulate and cultivate in those under their teaching a *desire* for wholesome surroundings and exercise. Let this demand be established (and by this is not meant that spasmodic impulsive demand only too often put forward by individuals to parade their knowledge of hygiene), and the labor of the sanitarian is simplified. They *can* and *will* meet all such demands, and with each successive change of environment, the system will not be compelled to re-organize its defences and undergo those radical changes that often tax it inordinately.

But the attitude of the medical profession toward this phase of sanitary improvement! It is an opprobrium to the profession that it is doing so little toward furthering this reform, both by teaching and example. We are to-day more indebted to chemists and sanitary engineers for improvement in this department than to the medical profession. It was most forcibly said by Prof. Max Pettenkofer at the Vienna Hygienic Congress of last Fall, that sanitary science in its present state can scarcely be said to be the offspring of the medical mind, but only, here and there, an indifferently acknowledged step-son. Unless the profession bestirs itself in this matter, the whole subject will grow beyond its grasp. In practice (and example) the profession is certainly deserving of criticism. What medical student has ever enjoyed the benefits of a properly ventilated lecture hall? A few detailed instances may be cited, where even illustrious assemblies of physicians and hygienists have courted this stigma, and renowned surgeons have invited criticism on the inconsistency between their teachings and their practice.

The recent International Congress of Hygiene held at Vienna in September last, had its opening sitting in a hall that is without any pretence toward ventilation. Subsequent meetings were held in rooms decidedly unwholesome even when an efficient system of ventilation was at command. This is merely cited (and all can recall impressive instances of like character), to show that no matter how much a man may know about good ventilation and the evil effects of the opposite conditions, it avails nothing unless there be an ever-pressing, ever-present demand from within; a dominating craving of the whole system for wholesome surroundings, which can only be the result of careful education and cultivation during adolescence. The subject of ventilation was almost completely ignored by this illustrious assemblage in the seven days sitting's of many sections, although many of its members are regarded as authority on this question. What a contradiction, and what doubts of sincerity does it not raise to see the great German surgeons, general and special, vigorously and systematically guarding their patients from all septic influences, and at the same time exposing them to an atmosphere so foul and super-heated that it can scarcely be endured even by the most student-like students. After having made a few analyses of the air in such rooms, one cannot speak in terms too reprehensible of this indifferent practice, both at home and abroad.

In a certain eye clinic in Vienna (the surgeon was an ardent advocate of antiseptic surgery), two analyses of air were made; one near the door that entered the amphitheatre and another near the top row of seats. After a session of three-quarter of an hour, the sample collected below gave carbonic acid gas amounting to nearly 2.0 parts per 1000., and that collected at the top row of seats showed 3.6 parts of carbonic acid gas per 1000. The temperature above was 76.3° F. and that below was only 63° F. This was an ordinary clinic, and the students remained about one-half hour in such a room, and then the chances were that they went to another room equally bad.

Now, these are rather exaggerated instances of what obtains even in our own land in medical colleges, scientific assemblies and churches and schools. The medical profession, as a rule, give it the sanction of indifference. Is it a wonder then that the youth of the land arrive at maturity and come into that estate when they have the determining of their own surroundings, to a great extent, with many of their natural preservative faculties perverted, or even rudimentary? Let hygienic teaching aim to restore and cultivate these faculties, and influential example supplement the instruction.

PREVENTION OF COMMUNICABLE DISEASES FROM THE STANDPOINT OF THE LAWYER.*

BY R. LOUD,
ATTORNEY, ALBION, MICH.

Laws that may be enacted for the preservation of health are as praiseworthy and commendable as any laws that have been passed for the benefit of humanity, and indeed in its broadest sense the result and inevitable effect of every right law, as a rule of conduct, must be for the benefit of mankind from a sanitary point of view. The individual, whether protected in the exercise of his absolute or his relative rights, must be benefited by the enforcement of all proper laws, whether their object be the enforcement of the obligations of contracts, or the police regulations of a municipality. If the old legal maxim, "*sic utere tuo ut alienum non laedo*" (so use your own that it shall not injure another's), were obeyed, the general health of the community would be enhanced, and there would be less sickness and disease. To illustrate, take the matter of drainage, the cleaning of vaults, the removal of filth and garbage, the suppression of noxious weeds, and the observance of the laws relative to light and air, the smoke nuisance, and a thousand other instances that might be enumerated. If every man would so act and manage his business affairs as to have a due regard for the rights of others, he would promote the public health and help to prevent the spread of disease. If my neighbor's premises are filthy, or if he throws filth or directs drainage on to my lands, my health and the health of my neighbor is endangered. So if men could be taught that it is their moral duty to keep clean, to keep everything about them clean, much could be accomplished in the way of prevention of disease; but this is a slow, tedious and often unsatisfactory process. Education, to accomplish anything of importance, must begin in childhood and continue through life, and even through generations. So the police power of the State is invoked, and laws are made to prevent and restrict communicable diseases; but when we know that all such laws depend largely for their enforcement upon public opinion, and the sentiment of any particular community, we are brought right back to the moral law, or the moral duty of the individual, which can only be inculcated by long years of education and training.

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*Read before the Albion [Mich.] Sanitary Convention.

The ignorant Polack or negro who may never bathe, or wash his face and hands, will tell you that dirt is not harmful, that his father and mother never washed, and they were healthy and lived to a good old age. In the enforcement of these laws pertaining to health, the executive power has to combat the preconceived opinion of generations of ignorance and error, and I have heard men, otherwise intelligent, express the same idea,—that a reasonable amount of dirt was beneficial to health.

Laws for the protection of health are as old as any laws relative to the rights of persons. We read in Blackstone that "Injuries affecting a man's health are where, by any unwholesome practices of another, a man sustains any apparent damage in his vigor or constitution, as by selling him bad provisions or wine, by the exercise of a noisome trade which affects the air in his neighborhood, or by the neglect or unskillful management of his physician, surgeon or apothecary. For it hath been solemnly resolved that *mala praxis* is a great misdemeanor and offense at common law, whether it be for curiosity and experiment, or by neglect, because it breaks the trust which the party had placed in his physician, and tends to the patient's destruction."

As population becomes more dense, the necessity for sharp supervision and rigid enforcement of such laws increases. The unhealthy condition under which men live in cities, especially in tenement districts, where human beings are packed closer than sardines in a box, are simply appalling. In 1790, when there were but four American cities with a population of more than 10,000, and when the population of the largest was but about 40,000, it was easy for our people to relegate all matters relating to the prevention of disease to individual care, but now it is quite a different matter, when nearly one-fourth of our people live in cities, when a single city, with its surroundings, contains almost as many persons as the whole United States in 1790. The conditions of our American life have thus far been conducive to a low death-rate. London, Liverpool and Manchester are far ahead of us in their management and control of these matters, and especially in consuming the smoke from their factories, rendering it much less offensive and injurious to health.

All sanitary legislators should be entirely free from political or partisan influence. Legislatures should see to it that proper laws are enacted to aid municipalities in fighting off disease. The trouble seems to be not so much in the paucity of our laws, as in the proper enforcement of those we have. Think of two well developed cases of leprosy in Philadelphia and one in Minneapolis in this enlightened age. True, it is claimed that the two cases in Philadelphia were smuggled into the city, but that such a thing is possible shows the inefficiency of the authorities whose duty it is to execute the laws. How often do we see filth and other matter dangerous to public health allowed to accumulate in our cities, and all for the want of proper officers to enforce the laws. Again, some laws are invoked and distorted from their true spirit and intent by grasping and avaricious men, for their self aggrandizement. Take for example the drain law, as applied to swamps and marshes, and let me say here that we are making a grand mistake, especially here in Michigan, in allowing our lakes to be drained, and their beauty spoiled forever. To say nothing of the desecration of the fair face of nature, it is absolutely injurious to health and a positive damage to all the surrounding country to drain the lakes and ponds upon which it borders. It also lessens the amount of rain-fall and renders our country more subject to drouths. It diminishes the humidity of the air and renders the upland less productive by depriving it of the moisture that permeates the surrounding soil, while in most cases it is injurious also to marsh and swamp lands that are made dry, producing a soil that will burn like tinder, and killing all grass fit for pasturage. To prove this one has only to visit our once beautiful Spectacle Lake and its surroundings, and witness the results of the withering touch of the drain law. Let us see what is said to be the object of this law. We read from the law, "That water courses, ditches and drains for the drainage of swamps, marshes and other low lands, may be established, constructed and maintained in the several counties and townships of this State for the benefit of the public health, under the provisions of this act." Application may be made by any three freeholders of the county, thus placing it in the power of three men who may live miles away from the lands to be drained, to set the law in motion. This would seem to proceed upon the theory that the object of the law is the public health, but how true it is that generally the three petitioners are actuated by sordid motives purely, and a desire to add a few paltry acres to their already opulent farms. Will anyone have the hardihood to say that it has inured to the benefit of the public health to destroy such beautiful bodies of water as were Spectacle Lake and Duck Lake before they were drained? On the contrary, is it not absolutely injurious and detrimental to health, and ought such vandalism to be permitted? Laws relative to public health should be enforced in their true spirit, and not for mercenary purposes.

The indiscriminate destruction of our forests is sure to bring drouths and tempests in its train. Instead of the mild, gentle rains of former years, which are so beneficial to vegetation, we are experiencing floods and blizzards, and other atmospheric extremes. The mighty monarchs of the forests protect with their broad, spreading arms the virgin soil (causing it to retain the moisture which gives it life) and temper the elements with gentleness and moderation.

Even now as I write, Michigan is suffering in some places for want of water and is in danger of being deprived of the comforts and conveniences of an abundant water-supply. The proceedings, recently published, of the State Board of Health show that from March to September the rain-fall was far below the average for the nine years from 1878 to 1886 inclusive. They show also a marked increase in the prevalence of typhoid fever, notwithstanding the efforts of the Board for the prevention and restriction of this disease. As it is evident from all the facts attainable that forests are beneficial to the public health, how imperative it is that we should have and enforce laws for the preservation and renewal of these "pathless woods." But when we consider the obstacles to be surmounted in the enforcement of such laws, the wealth and influence of soulless corporations to be encountered and overcome to bring about even the passage of them, when monopolies control legislation,—as Wendell Phillips said of Tom Scott the once great railroad king: "With one hand on the Atlantic, the other on the Pacific, he makes vassals of pigmy legislatures,"—when we consider the mighty work before us, and the fruitless endeavors of the reformers of the past in their fight against the power of money, our resolution falters, and "meek-eyed patience folds her hands in despair." But the discussion of these questions will accomplish much. A great moral lever is being placed under the mass of corrupt and venal legislation. The individual is being educated into a more perfect manhood, and is taught to believe that "cleanliness is next to Godliness."

Public sentiment must be educated, and the individual brought to the conviction that it is his highest moral duty to sacrifice some part of his personal liberty for the general good, to submit to many personal inconveniences, as for example to be quarantined in time of danger, shut out from the society of his friends, and prevented from attending to his necessary business affairs, so that the good of the whole may be conserved.

The question, however, of how far the State may interfere with the liberty of the individual for the general good is a subject too comprehensive for this paper. I will only add that this society has a great work before it, and by proper endeavor can accomplish much.

SCHOOL HYGIENE.

BY D. F. LINCOLN, M. D., OF BOSTON, MASS.

(Continued from page 303.)

Not to mince matters, the direct exposure of a sensitive part of the body to the gusts of a north-east storm is not a thing to be regarded as a trifle; in certain states of the system it may be highly dangerous. And both girls and small children are sometimes led to slight the calls of nature, to their bodily harm, by fear of exposure to bad weather. The plan here suggested is one which may be found illustrated in the report of the Connecticut State Board of Health for 1883.[1] In that report there is given a plan for a country district school, which places both privies under the school roof, but at opposite ends of the structure. Difficulty in keeping the boy's place in order (owing to the need of a urinal) is anticipated, and there is presented, as an alternative, a plan which contains only the girls' closet, as is here recommended.

The figure appended is taken from that report (numbered figure 10—in the present essay, No. 15). It shows a single school-room with separate entrances for the sexes. On the girls' side at the rear is a small, square building, isolated from the main building by an 18-inch passage-way around it, but intended to be sheltered by the same roof. The detail of the construction of such a closet is very simple.

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[1] In a paper by the writer of this essay.—SECRETARY.

It requires a receptacle, consisting of a brick trough about two feet wide, rounded at bottom and corners, and coated internally with coal tar to prevent the absorption of fluids or gases. The coating is continued over the top of the bricks and down the front as far as exposed. The bottom is an inverted arch of masonry, bedded with cement and coated with the same, and projecting slightly at the outer end to facilitate removal to buckets. Four feet is a sufficient depth. The bottom ought not to be so low that water from the surrounding land can run into it; and it is better that it should be raised above the ground level for convenience in removing the contents. There should be a bin for dry earth in a sheltered place handy for use. Two inches of this earth, finely powdered, are to be spread on the floor of the pit at first, and a little sprinkled on daily; a complete removal is made at the end of each week.

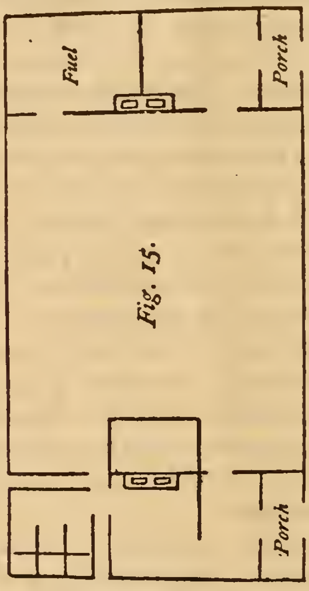
Fig. 15.

The present writer would corroborate the plan here proposed by cases which he has recently seen, in which the earth removal system is carried out with entire success. An ordinary projection in the rear answers every purpose; the chamber ought, however, to be isolated by a narrow passage-way, furnished with screened windows, which should be kept open. The portable earth-closet may be found useful, but in reality it possesses no advantage over this arrangement.

The only disinfectants required for well arranged water-closets are water, soap, and fresh air. For earth-closets, no more than these and earth are needed. Privies ought not to become offensive: treatment with earth should be resorted to, and if that is thought inapplicable to deep vaults, then let the vaults be shallow for the purpose of speedy removal. But in cases of existing nuisance, or in epidemics of fever, dysentery, or cholera, it is well to be provided with a temporary remedy; and for this purpose, chloride of lime, or corrosive sublimate, as recommended by a committee of the American Public Health Association, may be used. Chloride of lime has the disadvantage of a strong smell. Whichever is used may be prepared by dissolving in soft water chloride of lime (of the best quality) in the proportion of a pound to four gallons, or corrosive sublimate, a pound to twelve gallons. The latter solution is to be colored with permanganate of potash (nine drachms) to prevent mistakes. Of the former solution, use a quantity equal to the supposed solid contents of a vault; of the latter, one-fourth as much.

If used undissolved, one pound of chloride of lime corresponds to thirty pounds of the solids; one pound of corrosive sublimate to five hundred pounds. Subsequently, dry chloride of lime may be freely sprinkled over the contents. A corrosive sublimate solution may be used for the same purpose, four gallons a day, made by the following formula: Corrosive sublimate and permanganate of potash, of each 2 drachms (¼ ounce), dissolved in a gallon of soft water. This may be kept in a tub or crock, not in a metal vessel. As a precaution in case of an epidemic, wash the interior of the vault daily with this. If green vitriol (sulphate of iron) is used, take a pound and a half to a gallon of water.

V. HYGIENE OF THE EYE.

During the period of school-life, as is now generally known, certain affections of sight increase. It would appear from the uniformity of results of investigation that the increase is a general rule; and most of those who have treated of the subject have considered it due, in a great degree, to the effect of ever-exertion of the eyes in school, more particularly when the light is bad and the rooms unwholesome. It is generally accepted as proved that near-sight is very liable to be inherited. Far-sight (old-sight) is also found in children, and, like near-sight, it increases in frequency and degree as children grow older, until somewhere about the age of fifteen it begins to be less frequent, and at the age of twenty, among students, near-sight decidedly preponderates over far-sight. Dr. E. G. Loring has given diagrams illustrating this fact in the case of three nationalities—the German, the Russian and the American. The observers, whose facts are taken for the diagrams, are Conrad, who examined 3,036 eyes of school-children in Königsberg; Erismann, who examined 4,368 eyes of scholars in St. Petersburg; and Derby & Loring, who examined 2,265 eyes in New York schools. The ages in all cases run from the youngest to the oldest pupils, including members of superior schools, up to the age of twenty. In the German table the percentage of near-sighted eyes rises from 11 1–10 in the young children to 62 1–10 in the oldest; in the Russian, from 13 6–10 to 43 3–10 per cent.; and in the American, from 3½ per cent. at six to seven years to 26 78–100 per cent. in the twenty to twenty-first year.

There are a good many other similar series of observations, all agreeing substantially with these, but the German percentages are always very much higher than the American. This is not surprising if school work has anything to do with the result, for German children in all superior schools (real-schulen and gymnasia) are made to do an amount of work which is incredible to our school-boys, and with some results to show in the way of intelligence, too. German children in American schools also show a decidedly greater percentage of near-sight than American children, owing, no doubt, to hereditary influence. In a board-school in London, Brudenell Carter has lately found nearly 10 per cent. of near-sight among 267 children. These are the facts, and to most minds they seem to point to a tendency in national life which is truly alarming. It is a distinct drawback to a person's usefulness to have abnormal sight; to have to wear glasses is a serious drawback for many purposes; and yet Germany, which is leading the world in education, is far ahead in respect to near-sight, and we seem to be following her in both points.

There are those, however, (as Landolt), who lay the chief stress, as regards causation, upon general conditions of health, maintaining that hardship and poor fare constitute one of the chief causes of near-sight. It may be so, and this is not the place to enter into the argument satisfactorily; but if so, how shall we apply the doctrine to the case of Amherst College, where Derby's strictly accurate statistics show an increase from 44 2–10 to 50 8–10 per cent. during the four year's course? In Amherst the conditions of living are as favorable as can be found. Not only is there no "hardship and poor fare," in Landolt's sense, but the young men are under a regime of physical exercise which produces a distinct effect in lessening illness during their residence.

A brief statement of the leading causes' not in any presumed order of frequency, is given here:

1. Inherited tendency.
2. Study while the system is in a weakened condition.
3. Study in a bad light.
4. Study in a bad posture.
5. Study while the eye or brain is fatigued or congested.
6. Study in excess at the formative period of life, when the bodily tissues easily assume a wrong bent.

These will probably cover the ground, so far as relates to our present practical object, pretty nearly. The writer ventures also to offer a series of practical remarks in the form of rules at this point, leaving further discussion till later.

RULES FOR USING THE EYES.

In school work we should require—

1. A comfortable temperature, and especially let the feet be kept warm and dry.
2. Good ventilation.
3. Clothing at the neck loose. The same as regards the rest of the body.
4. Posture erect;—never read lying down or stooping.
5. Little study before breakfast, or directly after a hearty meal; none at all at twilight or late at night.
6. Great caution about study after recovery from fevers.
7. Light abundant, but not dazzling.
8. Sun not shining on the desk, or on objects in front of the scholar.
9. Light coming from the left hand, or left and rear; under some circumstances from in front.
10. The book held at right angles to the line of sight, or nearly so.
11. Frequent rest by looking up.
12. Distance of book from the eye about fifteen inches.

As regards the causes. No. 2 refers especially to the case of convalescents after measles, scarlet fever and other weakening fevers. No. 6 requires attention on account of some suggestive remarks made by Dr. Loring in the report referred to. He enlarges on the comparative neglect of out-door life, and the unwholesome habits of eating and living that are found among German children as contrasted with the free play and plenty of fresh air that boys have in our country. He also asserts a belief that since myopia is a disease of childhood, and rarely originates after the age of fifteen or sixteen, it is desirable to give children little severe study until after they have passed that age. More concretely, he points to the life of an English school-boy, with his long hours of foot-ball and cricket, as a better ideal than the German plan.

As regards the rules—

Nos. 3 and 4 are intended to prevent the occurrence of congestion of the head, which is very likely to injure the eye. A recumbent posture is bad for another reason, viz., because it places the eyeball in unaccustomed positions, disturbing the equilibrium, and deranging the habitual action of the eye muscles.

No. 5. Study before breakfast is usually work done at a disadvantage, since that period is one at which the strength of the system is at a low point in many people. If study is done by artificial light, the trouble is much worse.

No. 7. Some persons are unduly sensitive to light, while others require an amount which is excessive for the average person. Regard may be had to this fact in arranging the pupils. Windows of ground glass, if within the range of sight, are annoying on account of a kind of dazzling effect; if the sun is upon them, they are intolerable.

No. 9. If light comes from the right hand, the pupil's hand in writing shades his work annoyingly. If from the rear, he derives no direct benefit from it unless he turns himself so as to get rid of the shadow; this is the position required in writing by some teachers. A front light, from a window so high that pupils practically are not aware of its presence, is good for the purposes of writing; but such a light can hardly be obtained in a class-room without annoyance. Practically, there must be no windows for scholars to face while employing their eyesight upon tasks. This rule also forbids placing black-boards between windows, so that scholars are obliged to face a full light while trying to read what is written on them. And since the black-board is one of the chief instruments of instruction, and a large extent of it is held desirable, there is an advantage in restricting windows to one side of a room, so that the strip of black-board may run around three sides unbroken, and with every part of it in a good light.

No. 10. The desk lid slopes for the purpose named. It is useful to have light frames for holding books in a more upright position while no writing is going on. Some desks are made with a joint in the middle of the lid, giving the means of obtaining such an inclined book-holder.

No. 11. The old rule, which punished all who looked up, must be given up. If a pupil is restless and does not apply himself, his case can be reached in various ways, but not by a prohibition of this sort.

No. 12. This distance need not be an invariable one at all times. If generally observed, it will correct the habit of stooping, In teaching penmanship, very great care is needed to prevent the formation of bad habits as regards attitudes. The author has seen a whole roomful of children writing, with their eyes at an average distance of less than three inches from the paper. This exercise must not be engaged in if cloudy weather makes the light poor. Ink should be of a kind that gives a perfectly black mark when first put on paper, not the thin, bluish fluid which is black the next day.

This is the proper place to mention with condemnation the atlases which are often used, crowded with detail in small, delicate letters; also the small, "school" editions of large, standard dictionaries, printed in type which, though clear, is exceedingly fine. Many school-books of our day deserve much praise for their clear, bold type. The use of large-type charts in teaching an entire class is to be commended as avoiding the necessity for a certain amount of poring over books.

Here we may repeat what has already been said about very deep or wide rooms. Many such are wholly unsuited for comfort in writing.

If there is a tendency to near-sightedness, no pains should be spared to prevent a child from getting the habit of holding his eyes too near the book. The distance of fifteen inches is not great; but a child must sit up in order to maintain it. This connects the present topic with the question of school-desks, of which it will be convenient to speak elsewhere. The maintenance of a true posture is dependent on true proportions of desk and seat. When these are obtained, and a child with near-sighted eyes is unable to see clearly at the distance named, it is the opinion of many modern opthalmologists that he should be furnished with glasses just sufficiently strong for the purpose of desk work. At the same time he may be prevented from crouching down by the use of an apparatus which keeps the head at the distance required. Such an apparatus can be made so as to give no annoyance, and can be kept permanently screwed to the desk. Förster, in 1883, reported several cases of remarkable improvement under this treatment.

Although this is not a place for discussion of the points involved, it may be well to mention that the act of keeping the eyes close to an object is held to involve a muscular effort, both in the act of converging the eyeballs, and also in the (unconscious) act of accommodating the lens by the ciliary muscle, which contributes to the increase of existing near-sight, if it does not originate it. The best light for working purposes comes from above, and is nearly white. This suggests two points:

1. Windows throw light very obliquely on distant objects. It is held by the best authorities that in general they afford sufficient light only when the distance from the windows does not exceed once and a half times the height of the window itself. This restricts the depth of a room to about twenty feet; a few more may be allowed for the width of an aisle. In one of the handsomest high school buildings in the country the depth from windows to opposite wall is forty feet, which cannot be reconciled with true principles.

2. If light from above is to be sought, the upper part of the window is most valuable, and should be placed within six inches of the ceiling. This greatly improves the illumination of the ceiling, which is itself a very important light-giver. The lower part of the windows is not of so much consequence. It is desirable that they should not be so low as to let in light full upon the face horizontally. If the sill is placed four feet from the

floor, no serious loss of light occurs. It is usually stated that if the surface of window-glass is calculated, it should amount to from 1-5 to ⅙ of the floor surface. Of course this depends somewhat on the locality. In order to secure the required amount, one side of the room must be made as full of windows as is consistent with the strength of the wall. The tint of the walls should be a neutral shade of blue, quite light. In general, paper is less cleanly than a hard finish.

Blinds should keep out the sun, and admit light and air. They are often poorly made; the rolling slats get out of order. They should be of a light color; natural wood color changes to a dark brown in time, but a light green tint is very pleasant, and admits a sufficiency of light when the sun is shining on the blinds. Solid shutters are not suitable. Curtains ought to be provided. The kind which rolls from the bottom is best, for it cuts off the horizontal light, which is often very annoying to the teacher as well as the scholars, while it leaves the upper part of the window free. If it is thought best to place any windows in the rear end of the room, they should be provided with these shades. Or the windows in that situation may be placed at the height of six or eight feet from the floor.

Projecting "architectural features," as cornices and pillars, are not to be allowed to interfere with windows, or lessen the amount of light entering. Windows must be square at the top.

(To be continued).

DISEASES INCIDENT TO POVERTY.*

By A. ARNOLD CLARK,
OF LANSING, MICH.

Hawthorne once regretted that we should divide men into classes and refer to them as "those who have money and those who have not." He said we might as well classify men as those who have gout and those who have not, because the gout is sort of a bond of union among the rich. When we are told that a man has the dyspepsia, we don't need to be told he is a high liver. So perhaps neuralgia might be looked upon as a fashionable disease. Dr. Johnson said it was a peculiar privilege of the poor man to be healthy without the aid of drugs. But, like all other attempts to prove poverty a good thing, this failed. The poor man can be healthy without the use of drugs, but he may have to get along without drugs when he is sick.

Disease is a greater enemy of the poor man than of the rich man. This is proved by the fact that the mortality among printers, glass-workers and men working in other trades, is two or three times as heavy as among lawyers, ministers and doctors, though the mortality among doctors is said to be higher than among other professional men, because of the great exposure to communicable disease.

Every trade has some disease which serves as a sort of a coat of arms for that trade. We hear of "painters colic," "potters asthma," "grinders asthma" and "coal miners black lung." We even hear of "knife grinders consumption" among those who have to breathe an atmosphere of fine steel dust for twelve to fourteen hours a day. Printers are subject to lead poisoning. Hatters have to stand all day in a room with very high temperature and water up to the ankles. It is even said that the hair of coppersmiths sometimes turns green, because of the absorption of the copper acetate. But it is not my purpose to speak of the diseases incident to trades. Some might say they were not diseases incident to poverty. Suffice it to say, every city should have a sanitary inspector of factories, who should see to it that every factory has the best appliances for removing poisonous gases, the best safety apparatus—masks and respirators for protecting the eyes and lungs of workmen, and a public bath for employés. In occupations particularly dangerous to life and health, the hours of labor should be very much reduced by law. If I maintain a slaughter house, which is offensive to the nostrils of a thickly populated community, I maintain a nuisance, but what shall we call the factory which daily endangers the life and health of its employés?

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*Read before the Albion (Mich.) Sanitary Convention.

What are the diseases incident to poverty, independent of those diseases incident to trades? They are not so noticeable in Michigan as in the large cities. We must remember in this connection what has been called "Farr's Law of Density,"—"the nearer men live to each other the shorter their lives are." We must also remember that at present 25 per cent. of the population of the United States live in the large cities. Less than a century ago it was only 3 per cent. We are rapidly approaching the condition of European society, where the city has swallowed up the State. "A thousand perils" cried the Roman poet, "a thousand perils beset the great city," and he was right. It is in the great city that we meet the extremes of poverty, the great mortality and contamination of the soil. Rome fell when she had absorbed the population of Italy and become the center of corruption as well as the center of military glory. Paris has become France, and at Parisian caprice must France be governed. How long before it shall be said that New York is America? Our population is already congested, we are not only crowded into the large cities, but here we are crowded into a few houses. The people of New York city live, on the average, twenty persons to a dwelling. Less than four per cent. of the people of New York live in single houses, and they are the rich few. They get the sunshine, they get the best water-supply and sewerage which the city affords. But the tenement house is the poor man's home, if you can call that home where the father never by daylight sees the faces of his children.

Bishop Huntington, a few weeks ago, investigated some of the tenement houses of New York. He found 2,076 people living on one block. Think of crowding the population of Albion into less than two blocks. He found these people living sometimes fourteen or fifteen in two rooms or even in one room. This small room served as laundry, workshop, parlor, kitchen and bedroom. "The nearer people live to each other the shorter their lives are." Is it any wonder that two-thirds of the mortality of

New York city should occur in the tenements? Is it any wonder that the mortality in the city is two or three times as high as in the country? Is it any wonder that these people waste away by the thousands with what is known as "tenement house rot?" A gentleman who witnessed the riot of 1868, wrote soon after of these tall, dirty buildings, as literally "hives of sickness and vice." The tenants had gathered on the side walk to see the fire. Mr. Willis describes the wretchedness, the disease, the drunkenness, the sin and squalor, and says that to walk the streets as he walked them "during those hours of conflagration and riot was like a fearful witnessing of the day of judgment, with every wicked thing revealed, every hidden horror and abomination laid bare before hell's expectant gaze."

People would get excited over a conflagration in one of these tenement blocks, they would watch the flames leaping from room to room, they would see the faces at the window and exclaim, dreadful! dreadful! no matter what the cost, bring on the fire department. But once strike a diphtheria spark in one of these houses and it is just as sure to spread over the entire building as blaze—and more, because isolation of the sick is impossible, people are used to it, and the sanitary department is not as well paid or organized as the fire department.

Bishop Huntington says that a death in one of these houses is only looked upon as "a disagreeable accident." "The corpse lies for two days in the same room where the family eats and works and sleeps." Perhaps another child is sick in the room and the temperature above the bed registers over 100 degrees. In the rules which Dr. Vaughan gives for the prevention of the formation of tyrotoxicon in milk, I read that when the milk is received by the consumer it should be kept in a clean place free from dust at a temperature not over 60°, but here it is over 100°, and they can't afford ice. They not only get an impure quality of food, but their nostrils are constantly greeted by poisonous gases from the sewer; or perhaps the slops are run by imperfect drainage into the cesspool in the back yard, and they pour water into the cesspool and take it out of the well.

So when you ask me to tell the diseases incident to poverty, I mention scarlet fever, diphtheria and all those diseases which depend for their restriction on the isolation of the patient. I mention all diseases which are aggravated by impure air, over-crowding and soil contamination. I mention wasting diseases and nervous diseases, diseases due to exposure, rheumatism in damp cellars, pneumonia and bronchitis in winter, and cholera infantum in summer, in fact all those diseases which we often lay to "God's providence," but which are really due to "man's improvidence." I don't say that "every sick man is a rascal," but there would be no sickness from preventable diseases, if there was not some rascality somewhere.

What is true of the large cities is true in degree in the small cities. Dr. Russell, the health officer of Glasgow, from a study of the different cities of Scotland, came to the conclusion that in those cities, where there was the highest average number of persons to the room, there was the highest mortality. He also found from a study of the twenty-four statistical districts of Glasgow, that in those districts where there were the most large houses, and the fewest small houses, there was the lowest mortality and vice versa.

The reports of the Registrar General of Great Britain indicate that for every 1,000 persons living in England and Wales, twenty-five die in the cities where only seventeen die in the country. You see why Coleridge said, "God made the country, but man made the town."

In Rhode Island the experience of fifteen years shows that the chances are that a man will live five or six years longer in the country than in the city of Providence. Some of this may be due to the greater worry and hurry and fret of city life, but much of it is due to poverty.

Frequently, reports received at the office of the Michigan State Board of Health read, "family lived in a log house, isolation was impossible" or "low, damp soil," or "family well-to-do and the case was kept isolated from the other members of the family—no other cases occurred." In one case there were, I believe, five deaths in one family from diphtheria, and the health officer wrote that the family was poor, lived in a log house with only three rooms, and that it was absolutely impossible to isolate the sick from the well.

It is only a question of degree. We don't see so much of this problem in Michigan, because we have not here such extremes of poverty. But after all, what is poverty? It is the lack of something essential to the enjoyment of health and happiness. And what is more essential than air? An English writer says that men could live three weeks without food, three days without water, but only three minutes without air. Now, whether a man lives in the tenement houses of New York, the factories of Michigan, or the recitation rooms of our schools and colleges, if he has to breathe air which has been breathed before, he is a poor man and must expect to "enjoy poor health." Why did over 120 Englishmen die within a few hours in the famous black hole of Calcutta? Because they had breathed up all the air there was there in about fifteen minutes. They then had to commence breathing each other's breaths, and they kept on breathing each other's breaths until they finally died for want of breath. Shut up fifty scholars in the ordinary recitation room, and they will breathe all the air up in a few minutes, and if there is not proper ventilation, they will then commence to breathe their own breaths over again—not their own breaths, for each pupil "hasn't the privilege of choosing his own breath, but must take it as it comes." Now those students may have a good deal of money, but they have some of the main symptoms of poverty; and I don't think my definition a narrow one, when I say that the main symptoms of poverty are unsanitary surroundings. I don't say that all poor people have unsanitary surroundings, but the two go hand in hand; and if science is ever to lift men out of poverty, a large share of the work must be done by sanitary science.

A year ago the U. S. Commissioner of Labor sent inquiries to prominent people all over the country, asking the cause of the late labor depression. He received 119 different replies, and one man said that all labor depressions and poverty were due simply to a neglect of the principles of sanitary science. I would not be so narrow as that, but I would say unsanitary surroundings take away self respect, make men peevish, give them impure blood, dull their brains, and do, I believe, tend directly to lower their wages. I believe that if you could give men better food, better air, better water, in short raise their standard of living, you would raise the standard of wages. I believe that if you could reduce the American laborers to the Hindu standard of living, they would soon fall to the Hindu standard of wages. I believe that one way to make a slave of the American laborer is to keep him sick three-quarters of his time.

Perhaps it is of more interest for us to know that not only is there a great deal of sickness incident to poverty, but there is a great deal of poverty incident to sickness. Poverty makes a good many sick, but sickness makes a good many poor. The fowl is hatched by the egg, but the fowl lays the egg. Max von Pettenkofer says that every citizen of Germany is sick on the average twenty days out of each year. This is based on reliable data. If every citizen of Michigan is sick twenty days out of each year, that means forty million days lost in Michigan each year because of sickness. If the cost of drugs and medical attendance be placed at the low figure of fifty cents per day, and the loss of wages at the same low figure, (in all $1.00 per day), then the people of Michigan are forty million dollars poorer each year because of sickness. Who pays the doctors of Michigan? Who maintain the drug stores? Who loses wages when he is sick? The poor man. We hate to see a poor man burned out of house and home. We put in hose carts, hook and ladder truck, electric bells, and have horses ready to run at a moment's notice to save our houses from fire. The city of Detroit spends each year $200,000 to maintain its fire department. Yet I do not believe the annual money loss from fires in Michigan is as great as the annual money loss from sickness and deaths. How much more reason then for having a well-paid sanitary fire department in every city in Michigan as active on the outbreak of a communicable disease as a fire department would be on the outbreak of a fire.

To put what I have said in a nutshell, I believe that what the fowl is to the egg and the egg is to the fowl, that disease and poverty are to each other. They are of the same species. Each multiplies and produces the other "after its own kind."

* * *

Disinfecting Institutions in Germany.—Meetings are being held in almost every city and town of any size in Germany for the purpose of arranging for the establishment of disinfection institutions like those in operation in Berlin and Dresden. *Rundschau* (Prag) recommends individual apothecaries to establish small disinfection ovens in towns where the authorities will not take action, and thinks that such could be made sources of considerable revenue.—*Sanitary News.*

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SPECIAL ARTICLE.

WINES AND LIQUORS.

As *practical* men, it behooves us to take the world as we find it and to endeavor to make the best of it as it is, rather than to undertake to make it as it should be, a visionary task, totally beyond the realm of possibility. We can say, and we do say, most emphatically, that human nature would be better, morally, physically and intellectually if alcohol was unknown ; we can say and we can believe, as we do, that alcohol is in no way essential to the existence of mankind and that its use as a beverage is detrimental to the physical and mental health of humanity; we can strongly advise against its use, but, we must, as rational individuals, recognize the fact that neither legal nor moral suasion is, or ever will be, capable of totally eradicating the use of some artificial stimulant. The fact must be recognized that there are many able, upright, thoroughly conscientious men, men whose moral tone is of the very highest, men who lead men, who are regarded with the highest respect by their fellow-men, there are many such who do believe that the harm is not in the use but in the *abuse* of alcohol and who, using wines and liquors themselves in moderation, are not willing to subscribe to a sweeping condemnation of the use of alcohol.

We, ourselves, are heartily in accord with the rapidly growing temperance movement, as we believe it to be a move calculated to better humanity, but, to repeat, we are able to recognize the fact that, in spite of all we may say, do or write, a large proportion of humanity will continue to use alcohol, to use some artificial stimulant, whether it be the wine and whiskey of the American, the Rakee of the Turks, the Lagmi of Africa or the Pulque of Mexico. If, therefore, the use of alcohol is a necessity, that is to say, if the irrepressible demands of men make of it a necessity, to reiterate our opening proposition, we must direct our efforts so that we may reduce to the minimum the evil effects of a gratification of this demand rather than to waste our energy in a hopeless effort to make black white, or in other words, to abolish this demand. Believing, therefore, that a certain number of persons will use wines and liquors, in spite of all arguments to the contrary, we must (after expressly condemning their use) endeavor to point ont to such persons how they may indulge their dangerous fancies with the least amount of injury ; in other words, taking the world as it is, it is our duty to endeavor to make the best of it.

We have good reason for believing that the great mass of so-called *foreign* wines and liquors, "imported from the famous wine-growing districts of Europe," as their vendors proclaim and the consumers innocently believe, are the basest of sophistications. To begin with, we have the strongest reasons for believing that such an article as "Cognac" is not to be had for love or money. It takes a little over five gallons of wine (that are up to the proper alcoholic standard) to distill one gallon of brandy. In France, one gallon of wine (of the proper standard) is worth more than one-fifth of a gallon of brandy, so that, since no man is foolish enough to pay the expense of distillation and then get less for the product than he could obtain for the wine, it must be obvious to the most obtuse sense, that "French Brandy" is an unknown quantity, yet one apparently has no trouble in buying all of it that he wants, from which we must infer that all so-called "French Brandy" is a delusion and a snare.

A wealthy American, whose father was a Frenchman, and who, for twenty-five years, has divided his time between France and America, in course of conversation, recently said: "No genuine brandy is now made in France, In the famous brandy districts the grape vines have all been destroyed by insects and the land is planted with beets, potatoes and such vegetables as will produce the greatest amount of spirits. This is not guesswork, for I came from there not thirty days ago and I know it because I saw it. I have a few bottles of my father's old brandy left and when that is gone I will use California."

Let us see then what it is we procure when we ask for "French Brandy." As we write, we have before us some extracts from a liquor "*manufacturer's*" recipe book; please note that in the directory you will find this "manufacturer" rated as an "importer." To make a "*French* Brandy" that will sell at wholesale for $2.50 per gallon the "importer" takes

45 gallons of *cheap* California brandy.
125 " " Proof Spirits No. 2.
5 ounces " Tartaric Acid.
3½ gals. " Prune Juice.
1 gallon " Vinegar.
1½ " " Tannin.
1½ " " Sherry.
2 " " Oak Spirits.

and this mixture he colors to suit.

For a "French Brandy" to sell wholesale at $3.20 per gallon, he takes

25 gallons of cheap California Brandy.
20 " " cheaper " "
95 " " Proof Spirits No. 1.
1¾ " " Syrup.
½ " " Oak Spirits.
2 " " Prune Juice.
½ " " Orange Peel Spirits.
5 Ounces of Butyric Ether.
1¼ gallons of Tannin.
4 ounces Tartaric Acid.
5 gallons of Ordinary Rum.
Add Glycerine to soften.
Coloring.

It will be observed that in these two vile mixtures, the only real brandy is California Brandy, but, so great is the perversity of human nature, that this vile stuff, under the name of "French Brandy" will be eagerly bought, where pure "California Brandy" would be boycotted. So much for brandy; we must, perforce, conclude that if we buy "French Brandy" we are buying a sophistication that has never been near France. It would therefore seem that the physician has ever a higher motive than that of patriotism for using California Brandy in his practice, for it is the only way that he can procure the article free from dangerous adulteration.

But, suppose one is willing and able to pay a high price for his brandy, here is the formula for an article that sells, wholesale, for $4.25 per gallon:

45	gallons of *French* Brandy.
1	" " Tannin.
4	" " Prune Juice.
1½	" " Glycerine.
5	ounces " Citric Acid.
2	gallons " Syrup.
4	ounces " Butyric Ether.
6	" " Acetic Acid.
80	gallons " Spirits.

To make a still more expensive liquor, we add more "*French Brandy*" to the above.

Here is a mixture for the Connoisseur to sip slowly and smack his lips over.

But suppose you drink whiskey; let us see what the *manufacturer* offers you.

Here is a whiskey that sells, wholesale, for $1.60 per gallon:

800	gallons of Proof Spirits No. 2.
75	" " High Wine.
	Water to 90 per cent.
1½	gallons of Tannin.
4	ounces of Oil of Pimento, well cut in High Proof Spirits.
5	gallons of Oak Spirits.
4	ounces of Butyric Ether.
	Bead Oil to suit.

Is it any wonder that the man who freely indulges in this vile concoction of drugs, will have all kinds of inflammations and degenerations of structure.

This is the basis, we might say, of whiskey, but upon further reference to our recipe book, we find that we have but hinted at the injurious ingredients that are found in whiskey, brandy and wines.

Let us suppose that the manufacturer desires to impart an acid taste to his murderous liquor; he uses tartaric, citric or even sulphuric acid; if he wants a nutty flavor he uses oil of almonds or oil of mace; to impart a bitter taste, hops, quassia and snake root are used; for a vinous taste he employs rum, sulphuric acid or grape sugar; to give body, flax-seed, flour, oatmeal, honey or rice flour are called into requisition.

To artificially age a liquor, they use slippery elm or bitter almonds; while to impart a roughness and astringency they resort to alum, tannin, catechu, oak and quassia. For coloring purposes, red sanders wood, oak-bark, logwood, saffron, indigo, cochineal, Brazil wood, red beet and alkanet root are used. Of course, some of the articles enumerated are comparatively harmless, but think what a vile concoction of drugs such a liquor really is.

If we want a Gin, here is one that is sold wholesale for $2.50 per gallon:

49	Gallons of Domestic Gin.
1¼	" Tannin.
2¾	" Syrup.
2¾	" Glycerin.
¾	" Oak Spirits.
3¼	" Prune Juice.
95	" 2d grade proof spirits.

Juniper, oil of Bergamot and Nitric Ether are adulterations found in Gin.

Here is a "Rum" that sells wholesale for $3.95 per gallon:

125	Gallons of New England Rum.
	Spirits to raise proof to 109.
4½	Gallons of Prune Juice.
1¾	" Syrup.
1¾	" Glycerin.
1¼	" Tannin.

8	Ounces of	Butyric Ether.
8	"	Citric Acid.
2¾	Gallons of	Sherry.
1¼	"	Vinegar.
1	"	Tinct. of Orris Root

color to suit.

Truly a delectable mixture.

But why is it that these adulterations are resorted to? Because of the perversity of human nature. In the case of wine and brandies, it is because the people want or think they want, an imported article; since this, in many instances, cannot be procured, the manufacturer takes a native product (as we have seen in the case of brandy) and fixes it up to imitate the imported article, puts a foreign label on the bottle and sells it as something very different from what it really is. We have reliable information that one California Wine Manufacturer has hitherto secured all the cherry juice imported from Germany, with which he *made* imported Ports aud Clarets for sale to the Creole population of New Orleans, who gauge the quality of their wine by its color. Happily this is at an end, for the laws of California now forbid the use of cherry juice or any other coloring matter in any California wines. Just here it might be well to say that the newspaper reports in reference to aniline adulteration of California Wines, have been absolutely denied by the official report of the California Viticultural Commission.

The *New York Medical Journal*, a periodical of the highest standing, very pointedly says: "It may well be asked how often our citizens who import so-called Johannisberger, Chateau Lafitte, Chambertin, Chateau Yquem or Clos de Vougeot, really obtained the genuine wines known by those names. Very rarely, if ever, and the reason is not that a sufficient price is not paid, but that those wines are *produced only in small quantity, and are seldom allowed to get beyond the grasp of local potentates.*" Why then do we continue to strive for the unattainable? so long as we do, so long will the temptation for sophistication persist; for, if we demand an imported liquor or wine that cannot be procured, the manufacturer will take a native article and endeavor to make it resemble, as closely as possible that which we demand, when he will sell it to us with a foreign label as the genuine article. Such is the position of affairs to-day. We have the highest authority for believing that the vines of California have been brought to such a stage of perfection, that our native California wines are fully equal in every respect to those of foreign origin, and that California Brandy is, as we have shown in an earlier part of this article, really the only unadulterated Brandy that we can procure, and even this should be obtained from strictly reliable houses only. Why do we not, therefore, as sensible, practical, level-headed Americans, abandon this craze for foreign goods, when we have better goods for less money in our own country. We are convinced that it is very rarely that one can procure a reputed imported wine or liquor that is not more or less adulterated with more or less injurious ingredients, and while we must strongly reiterate our firm belief that humanity would be better off if it eschewed all alcoholic beverages, yet if they must be used, we are firmly of the belief that less harm will be done, if we abandon the cry for adulterations that claim to satisfy our demand for imported articles and take up the use of our pure native products. Let us be satisfied with domestic names for domestic goods and not go hankering for the unattainable. The journal already quoted, says: "We trust that these pure and wholesome wines, so advantageous in the dietary of many an invalid, and as a substitute for the vile concoctions consumed by the average American citizen, may eventually be furnished at the present price of beer."

There is a proposition that we think cannot be denied, viz.: "When there is a demand for an article that cannot be *naturally* supplied, artificial means (adulteration) will be called in to meet this demand." So long, therefore, as we demand *foreign* liquors, we will be supplied with *adulterated* liquors, and when we are satisfied to use a domestic article with a domestic name, we will be able to procure a *pure* beverage and not before.

The investigations made in the preparation of this report have satisfied our mind that it is extremely difficult to procure a *pure* foreign liquor, while we have been satisfied that the wines of our own country are not only pure, but fully equal to any others, and it is for this reason that we say to those who will use liquor, that they will experience the least ill-effects to health, if they will use domestic goods.

ADDENDA.

There were recently 179,000 men and women engaged in the sale of intoxicating liquors in the United States. The number of saloons per capita will be found below:

Nevada,	1 saloon to	65	Inhabitants.
Colorado,	"	65	"
California,	"	99	"
Oregon,	"	176	"
New Jersey,	"	179	"
New York,	"	192	"
Louisiana,	"	200	"
Ohio,	"	225	"
Conneticut,	"	226	"
Massachusetts,	"	256	"
Delaware,	"	258	"
Pennsylvania,	"	265	"
Rhode Island,	"	266	"
Illinois,	"	267	"
Maryland,	"	293	"
Wisconsin,	"	304	"
Minnesota,	"	311	"
Missouri,	"	337	"
Michigan,	"	350	"
N. Hampshire,	"	376	"
Iowa,	"	377	"
Indiana,	"	380	"
Kentucky,	"	438	"
Nebraska,	"	487	"
Tennessee,	"	525	"
Texas,	"	549	"
Arkansas,	"	554	"
Alabama,	"	608	"
Georgia,	"	612	"
Florida,	"	653	"
Missouri,	"	654	"
Virginia,	"	693	"
North Carolina,	"	708	"
Maine,	"	731	"
Vermont,	"	812	"
West Virginia,	"	817	"
Kansas,	"	877	"
South Carolina,	"	908	"

Cremation in Buenos Ayres.—During the past year 993 bodies were cremated in that city, of which number 742 were of persons dead of cholera, small-pox, and other contagious diseases.

NOTES AND COMMENTS.

DOMESTIC ANIMALS AND INFECTIOUS DISEASES.

That domestic pets are capable of taking and spreading infection has been amply demonstrated (says the *Med. Times*). That diphtheria is particularly liable to be so conveyed is shown by the experimental researches on diphtheria, made by Dr. Renshaw in 1884, who was successful in inoculating cats with diphtheria from the human subject. Dr. Turner, it will be remembered, last year presented an interesting report on diphtheria in animals to the Local Government Board. A further illustration is afforded by the following examples, the record of which is taken from the *Sanitary Record* for June: "In his report on the recent sustained prevalence of diphtheria in Enfield, Dr. Bruce Low, of the Medical Department of the Local Government Board, incidentally states that during the continuance of the epidemic cats were observed to suffer in considerable numbers from illness; and in December, 1887, and January, 1888, there was a large mortality among those animals, so much so that the attention of the dust contractor was directed to it. He stated that never in his previous experience had he seen so many dead cats in the dust heaps. Some households, seeing their cats ill, destroyed them. Though there were no known cases of diphtheria occurring in the practice of the veterinary surgeons at Enfield, yet they saw many cases of 'influenza' at this time among animals. The following is an illustration of the possible connection between diphtheria in children and in cats. A little boy was taken ill with what turned out ultimately to be fatal diphtheria. On the first day of his illness he was sick, and the cat, which was in the room at the time, licked the vomit on the floor. In a few days (the child meanwhile having died) the animal was noticed to be ill, and her sufferings being so severe and so similar to those of the dead boy, her owner destroyed her. During the early part of its illness this cat had been let out at nights in the back yard as usual. A few days later the cat of a neighbor, who lived a few doors further off, was noticed to be ill. It had also been out in the back yards at night. This second animal, which, however, recovered, was the pet and playfellow of four little girls, who, grieved at the illness of their favorite. nursed it with great care. All four girls developed diphtheria, their mother being convinced that they got it from the cat; and, indeed, no other known source of contact with infection could be discovered. It is easy to imagine cats catching an infectious illness like diphtheria, when we remember how often milk and other unused food from the sick room is given to the cat, or by some people thrown out in the back yard for the benefit of the neighbor's cat's, if they have none of their own. It is a frequent occurrence to see children carrying cats in their arms, and even kissing them. It is obvious that if the cats were ill with diphtheria the children, under such circumstances, would almost inevitably contract the disease.

AN INTERNATIONAL CONGRESS OF HYGIENE will be held in connection with the Exposition in Paris in 1889.

THE METHOD OF DISINFECTION PRACTICED AT THE QUARANTINE BELOW NEW ORLEANS.—No scientific report published by the Government this year has been more important than that just made by Dr. J. J. Kinyon, assistant surgeon in the Marine Hospital Service (*Weekly Abstract*, June 29), upon the germicidal powers of the different methods of disinfection practiced under the direction of the Louisiana Board of Health at the quarantine station below New Orleans. The report is important, not only because it shows the degree of protection against the importation of infectious diseases through the important port of New Orleans, but also, since the methods of disinfection practiced at other quarantine stations are similar to those in use there, the experiments show approximately the efficacy of each mode of disinfection, and suggest changes that should be made in their use.

The three methods of disinfection tested were: the bichloride of mercury solution, the application of dry and moist heat and fumigation with sulphur dioxide.

Dr. Kinyon finds the first of these methods defective, because of the difficulty of getting the disinfecting agent into cracks and corners, rubber goods, the under sides of decks, and into lockers, etc. He discovered in all these localities and articles that the microörganisms existing before the disinfection had not been destroyed, and he found them as plentiful on the floor of the forecastle of one ship, that was exceptionally filthy, after it had been drenched with bichloride of mercury for an hour, as before. Dr. Kinyon recommends that, in order to make this mode of disinfection more effectual, the bichloride of mercury be applied with a spray produced by connection with a steam-boiler, and that it be applied after fumigation by sulphur.

The results from the application of dry and moist heat were the most satisfactory of all. Cultivations of various disease-germs exposed to a dry heat of 176° F., and afterward to steam at a temperature of 212° F., were, with few exceptions, destroyed. Dr. Kinyon thinks that, in order to secure absolute protection, the heat should be made greater and the time of exposure increased.

In eleven experiments seventy-four disease-germs were placed in vessels among articles to be disinfected by the use of sulphur dioxide, but only sixteen of the whole were destroyed, or less than 22 per cent. Dr. Kinyon has very little to say about this method of alleged disinfection, except to recommend that the sulphurous fumes be applied in large quantities and be confined in the compartments to be disinfected a longer time. But he reports his experiments in full, and lets them speak for themselves.

The net result of these tests is to show that some disease-germs escape even when the most effectual modes of disinfection practiced at quarantine below New Orleans are resorted to, and that less than one-fourth of them are killed when the least effective method is used. We assume that the quarantine and city health officers everywhere will profit by the suggestions of this report, and that the public will be better protected in the future than in the past.—*Science*, July 13, 1888.

ANOTHER YELLOW-FEVER MICROBE FOUND.—Dr. Paul Gibier, who was deputed by the French Government to investigate the whole question of yellow fever, has just delivered a lecture before the Academy of Sciences in Havana, embodying the results at which he has at present arrived. Before leaving Paris, he felt so convinced of the truth of Dr. Freire's views that he got himself inoculated with some of the cultures which that distinguished Brazilian physician had brought. The first insertion—made with a lancet with great care—was followed by no result whatever. A week later some of the attenuated virus was injected subcutaneously, and this produced such violent effects that Dr. Gibier declares nothing in the world would induce him to submit to a repetition of it. Since his arrival in Cuba, he has made post-mortem examinations of a number of persons who have died of yellow fever, some of the examinations taking place only two hours after death, and one of them within fifteen minutes from the moment life became extinct. The examination of the blood taken from the heart in these cases, as well as the inspection of the urine, the bile, the pericardial fluid, the liver, the spleen, and the mesenteric glands, convinced him that none of these organs contain any microbe. He, however, discovered in the black matter always found in the intestines a bacillus presenting many points of resemblance to the so-called comma bacillus of cholera, being sometimes curved, and occurring in some cultures in a spiral form, possessing also the property of liquefying gelatine. The bacillus, when cultivated in peptonized broth, blackened the sides of the tubes; and when a few drops of the culture were injected into the intestine of guinea-pigs it sometimes proved fatal, the intestinal contents then showing a great resemblance to those found in yellow-fever patients. In dogs, the injection of a few drops into the small intestine rapidly produced violent effects—vomiting, diarrhœa, and, the night following, pyrexia. Cultures of this bacillus had a smell resembling that of the black vomit. A moist heat of 60° C. destroyed the bacillus in a few minutes; desiccation also proved fatal to it in less than twenty-four hours. This last observation led Dr. Gibier to suggest that if this bacillus was really the cause of yellow fever the immunity of inland districts might thus be explained, the comparative dryness of the air destroying the virus. It developed extremely well in sea-water charged with organic matter; living, too, for a long time side by side with the ordinary microbes of putrefaction, so long at least as the medium did not become acid, for even a very slight degree of acidity destroyed the organism in a few hours. In confirmation of observation made at the laboratory, Dr. Gibier mentions that he has several times had an opportunity of demonstrating the same circumstance in the dead-house, the contents of the intestines, when they have become acid some hours after death, ceasing to show the presence of the bacillus. Since writing on this subject previously Dr. Gibier has had opportunities of examining the bodies of foreign sailors who have died in the civil hospital of Havana, and he has been able to demonstrate the presence of the bacillus in those who had suffered from yellow fever, and its absence in those who had died from other diseases. His opinion is that yellow fever is due to the development of the microbe in the intestine, the affection being therefore essentially a local one.

SIMPLE TESTS FOR POISONOUS CANDY.—The *American Analyst* (March 15, 1888), writes that "to test candy with respect to poisonous colors one needs a few ounces of alcohol, about an ounce of bleaching powder in solution (hypochloride of calcium), a little white woolen yarn and a small bottle of aqua ammonia. See first whether the color can be dissolved out by alcohol; if it can, immerse the woolen yarn in the solution, and should the color adhere to the yarn and dye it, the probabilities are that it is a coal-tar color; if a red it may contain arsenic. If the alcohol produces no effect, apply a drop of the bleaching powder solution to the surface of the sweetmeat; if the color fades out, it is probably of vegetable origin, and harmless.

"The poisonous color most frequently used is chrome yellow, a compound of chromium and lead. Its presence may be strongly suspected if the following tests have shown that none of the harmless yellows have been employed. The harmless yellows most commonly employed are turmeric, a vegetable color, made from the root of a certain herb; fluor-scein, a coal-tar yellow, and a number of vegetable yellows. Turmeric turns red when treated with ammonia. The other vegetable yellows fade when treated with the solution of bleaching powder. To detect fluorscein, dissolve the candy in a tumbler of water, and view the water in the sunlight against a black background. If fluorscein has been used, the green fluorscein will then be seen. When the tumbler is held between the eye and the light, the color of the water appears yellow. If no results are obtained by any of these tests, the suspected candy is probably colored by chrome yellow and is poisonous. Burnt umber, an iron-bearing earth frequently used to adulterate chocolate confections, may be detected in this way: Dissolve the confection in a glass of hot water; if a brown, gritty residue remains undissolved on the bottom, the presence of the umber is indicated."

THE STORAGE OF LIFE.—At the last anniversary meeting of the Sanitary Institute of Great Britian, Dr. B. W. Richarson delivered an address, taking as his subject the "Storage of Life as a Sanitary study." The conditions favoring the storage of life he dealt with under the headings of hereditary qualifications, the virtue of continence, maintenance of balance of bodily functions, perfect temperance, and purity from implanted or acquired diseases. While urging the importance of maintaining the balance of the working organs of the body as a means of keeping up the storage of life, the lecturer spoke yet more emphatically upon what he termed "all-round temperance"—temperance in speech, action, thought, as well as in eating and drinking. Everything that quickened the action of the heart he regarded as a stimulant, taxing and reducing the storage of life. Necessarily the work of the sanitarian called for appreciative remark toward the close of the lecture, the prevention of "damaging diseases" promoting the storage of life. After all, in spite of the interest of the lecture, the moral is somewhat trite. The advantages of a favorable family history, the disadvantages of acquired diseases, the influence of personal habits of restraint—all these have long been granted. The individual may toil and strive, but he is still largely at the mercy of his neighbor, whose erratic proceedings may greatly upset all the foresight of storage. While all admit the value of personal attention to sanitary and physiological laws, most people will wish for greater powers of sanitary control over the actions of their neighbors says the *Lancet* and we concur in the observation. It is, we think by the dissemination of a knowledge of hygiene among the masses that we are to accomplish this result.

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CHEMICAL PURIFICATION OF SEWAGE.—From the *Journal American Medical Association* we learn that Dr. A. Pfeiffer has recently contributed an interesting paper relating to the insufficiency of chemical processes for purification of sewage, to a German sanitary paper. In a general way he reviews the different methods that have been adopted for the chemical purification of sewage, and points out the dangers of the irrigation method of sewage disposal. It is now understood that the great danger from sewage water lies in the microörganisms that infest it, and Pfeiffer asks if the modern methods of purification as applied to the waste of towns and cities, have any real effect in clearing the sewage of these microörganisms.

We know, of course, that carbolic acid, bi-chloride of mercury, and other chemicals kill germs, but we know also that we cannot apply them on any very extensive scale.

We cannot make the sewage strongly alkaline nor acid in order to destroy the microörganisms, because the fish in the stream would be destroyed, and the waters rendered useless and injurious. In Pfeiffer's opinion the other chemical methods that precipitate the solid portions of the sewage are of very little avail, since they do not destroy the bacteria, nor remove the dissolved organic matters upon which they feed. He claims that sewage thus treated will in a short time regain all its offensive properties, and that the clarification is but a temporary expedient. He thinks it would be better in the case of rivers of large volume to discharge the raw sewage into the river than to erect extensive chemical works for its chemical treatment.

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BATH ROOM DEATHS.—An elderly gentleman, says the London *Lancet*, was lately found dead sitting in a warm bath, which he had entered a short time previously. According to the medical evidence death was due to syncope, induced, in all probability, by the close heat of the room. We need not feel surprised at a statement by the coroner that deaths in similar circumstances are not uncommon. Now that almost every house of moderate rental has its bath-room, the size and ventilation of these apartments are matters of importance. There is too great a tendency to think that any odd corner may be used for this purpose. It should not need the teaching of a series of fatal accidents to impress an opposite principle. Clearly a room which in use becomes rapidly charged with water vapor should exceed rather than come short of the minimum space (say 800 cubic feet) required for each inmate of a normally constructed house. Ventilation can usually be obtained from the interior of the house, with an outlet for extraction of the old air and excess of vapor.

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SEWER AIR.—In the course of an otherwise very valuable communication to the *Press* (Sept. 2) Dr. William A. Hammond makes the statement "that it is quite doubtful that sewer gas as we find it in our residences is at all poisonous to those subjected to its influence." Such an assertion must not be allowed to go unchallenged, for, coming from such a distinguished source, it is calculated to do untold mischief. In so far that sewer air will not produce a *particular* disease unless the seeds of that particular disease be present therein, Dr. Hammond is unquestionably right, but that a person can continue to breath air contaminated by the emanations from organic decomposition, as sewer air is, without detriment to health is not a fact and it is dangerous teaching to make such an assertion. Dr. Hammond's arguments do not go far enough. He cites the instance of the workmen in the Paris Sewers, who enjoy good health, but he seems to forget the *law of tolerance*, and we answer his question "*as to the rats, where are sleeker and fatter ones found,*" by asking another, "*Because pigs thrive on garbage, does that make garbage wholesome food for mankind.*" Of course, we agree with Dr. Hammond, that an immense amount of sensational rubbish has been written about "sewer-gas," but we must, with all respect, deny his assertion that its inhalation, as found in the atmosphere of defectively plumbed houses is not injurious to health. Dr. Hammond does not seem to be very strong in his idea, for he qualifies his assertion by saying:

> "There is no satisfactory proof that the small quantity of sewer-gas that can escape into a house ordinarily well plumbed and duly supplied with windows and doors not kept hermetically sealed has ever caused a single case of disease."

In this statement we are inclined to agree with him, but we fear that many careless persons who read his original article and do not see this comment thereon, will fail to take note of his qualifying statement about good plumbing and ventilation, and will absorb only his dangerous assertion that sewer-gas is not poisonous.

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SCHOOLS SHOULD NOT OPEN UNTIL OCTOBER.—One of the principal excuses for coming home early from seashore and country, is that most of the schools resume work in September, and that the education of John, Mary, Tom and Lucy must not be neglected. A good deal of observation has convinced me (says Dr. William A. Hammond in *The Press*, September, 2,) that the difficulty is not so much with school commissioners and academy principals and college presidents as it is with the parents themselves, who act in total oblivion of the fact that mental health is absolutely dependent upon physical health. I am very sure, too, that school children, other things being equal, would learn more and learn it better in the nine months from October to July than they would with September added to the number.

Not only do our schools begin too early in the season and too many studies are pursued in them, but the hours devoted to school work are more than should be required. So far as the time, six hours, usually given to study in the school-room is concerned, there is very little fault to be found. But it is rarely the case that the work ends with the dismissal from school at 3 o'clock in the afternoon, for it is carried on with as much, if not more, assiduity at home and during hours that should be devoted to recreation. Teachers have often told me that they do not require their pupils to study at home. Doubtless they spoke the truth. They should have gone further, they should not have allowed their pupils to study at home. Yet parents who would unhesitatingly cut off the extra pieces of pie for fear of indigestion, will not hesitate to encourage the effort to absorb some additional branch of knowledge. There is a mental dyspepsia, the result of redundancy, as surely as there is that form which results from repletion of the digestive organs.

COMPRESSED AIR IN CONSUMPTION.—The use of compressed air in the treatment of consumption by means of the pneumatic cabinet, is now, we believe, a recognized procedure. In the *Medical Record* (September, 1), Dr. Walter Lindley suggests that we might try this treatment by sending our patients to points located below the sea level, where the air is very much compressed. We would thus secure the benefit of a *constant* use of compressed air, rather than for but short intervals as with the cabinet. Such a country he describes in Southern California, near Indio on the Southern Pacific Railroad. Here there is a valley containing some 40,000 acres, located three hundred and fifty feet below sea level, where we have moderately compressed air on a large scale. Should the climate prove unsuitable, it is but two hours ride by rail to Beaumont, 2500 feet above sea level, but two more to mountainous pine forests or to Los Angeles or to Santa Monica, Long Beach, Santa Barbara or San Diego, directly on the coast, and but nine hours' ride by rail and boat to Catalina Island, twenty-five miles out at sea, where a typical ocean atmosphere can be enjoyed. Thus an error in location can be quickly corrected.

STERILIZATION OF MILK.—Dr. F. M. Warner of New York City, recommends that we should prepare the milk for our bottle-fed children as follows:

Into an ordinary cooking steamer, which can be bought at any hardware store, a couple of inches of water is put and brought to the boiling point; the milk, which is the infant's allowance for the next twenty-four hours, is placed in as many nursing-bottles as are used during that period of time. These bottles, having been previously placed in an oven for a quarter of an hour, are now stoppered with cotton-wool, and put on the perforated plate in the steamer, not touching each other, the cover shut tightly down and the whole allowed to steam for half an hour.

As will be readily seen, by this method all germs are destroyed, and if the milk is left stoppered and in a cool place, it will keep a long time.

While the advice given by Dr. W. is good, yet we cannot think that it is necessary to take so much trouble. If we have *good* milk, keep it in a cool, clean place and have the bottles *scrupulously* clean, we are inclined to think that baby will thrive without the necessity of resorting to sterilization, which, however, should be considered an absolute necessity when we are not reasonably sure of the purity of our milk.

POISONOUS EFFECTS OF TIN SALTS.—The following is from a recent issue of the *English Mechanic:* Dr. Leonard W. Sedgwick says that the harmlessness of the salts of tin other than the chlorides is generally taken for granted, but the following facts appear to show that the assumption is incorrect: In October, 1886, I saw nine persons in one well-managed, healthy household simultaneously suffering from watery diarrhœa, sickness and great pain in the abdomen. A close investigation served to show that, excluding the water they drank (which was pure) and the air they breathed (which was free from drain contamination), there was one thing, and one thing only, they had done in common, and that was the eating of pears stewed in a newly tinned copper pan. It came out too, that many of them had suffered from two or three similar attacks on previous days, and that these attacks all occurred on days when they had eaten stewed pears. I therefore obtained some pears to cook, and, on testing the juice, found it laden with tin salts, but containing no copper. That the diarrhœa gave way in a short time to simple remedies, that the drainage and the water supply of the house were perfect, that the eating of the stewed pears preceded on the same day each attack of illness, and that pears similarly stewed were found to contain large quantities of tin salts, were to my mind conclusive, if circumstantial, evidence that the attacks of the diarrhœa were caused by the tin salts. And then occurred the thought that, if the cooking of a somewhat acid fruit for a short time in a tin vessel effected the formation of a poisonous salt of tin, the keeping of an acid fruit for months in a tin can must have a like result. I therefore tested the contents of cans of apricots, pineapples, peaches and tomatoes, and in every instance found a large amount of a salt of tin. In this I was confirmed by my friend Mr. Hugh Power, who also in one specimen detected a salt of zinc. Since then I have seen several instances where painful diarrhœa followed the eating of a tinned fruit, especially in one case where tinned pineapple was eaten by several persons, who all suffered in like manner. And so I am compelled to believe that many cases of casual and unexplained nausea and diarrhœa are caused by the use of tinned fruit. Indeed, since the occurrence of the cases in 1886, I have lost no opportunity of relating these things to my personal acquaintances and of advising the use of bottled fruit only.

BANK NOTES AND INFECTION.—A contemporary directs attention to a point of some sanitary interest in connection with the use of a paper currency—namely, the transference of infectious disease by this means. He discourses with somewhat alarming realism on the mischievous power possessed by the dirty notes for small sums which are commmon in some foreign countries. In a like strain he deals with the well-thumbed £ 1 notes so familiar in the sister kingdom of Scotland. Greasy, discolored and old, he seems to trace them passing from hand to hand and class to class, avoiding no form of illness but escaping all measures of disinfection. The question thus opened is indeed to some extent a practical one, and there certainly is, from the medical standpoint, more to be said in favor of a frequent issue of new notes than of the continued circulation of old and dirty ones. The velvet softness of a well-used note is familiar to many of us, and it suggests the distinct advantage of using in the exchange of money, some smooth and crisp form of paper, upon which the germs of disease would be less likely to establish themselves. No form of paper money can of course be purged from all such injurious influences, but there is no doubt that cleanliness even in this matter is in keeping with sanitary rule.—*Lancet*, Aug. 11, 1888.

FLIES AS CARRIERS OF DISEASE.—Since the question has been raised as to whether the house-fly can convey disease germs from one to another, it is of scientific interest to know that Dr. Guiseppe Alessi (*Medical Record*, September, 1) has answered it very decidedly in the affirmative. His experiments have conclusively demonstrated that the germs of consumption, typhoid fever and other diseases may be swallowed by the house-fly, and be eliminated from the bowels of the same with their virulence not only not destroyed, but, if anything, even more active. Why then is any one free from disease when flies are such constant and such intimate acquaintances for several months of the year. We take it that it is because of the rule that we so frequently enunciate; that two conditions are necessary for the production of disease: first, the seed; second, a *suitable soil*; when the latter does not exist, the seed, though present, cannot germinate. And this is in keeping with our argument, that while special precautions are valuable in special cases, yet the greatest safeguard against diseases of all kinds is to be found in the natural vigor incident to a well-ordered life.

TOBACCO HEART.—In medical journals one frequently reads of this condition, and it is well that all should clearly understand that the excessive use of tobacco will unquestionably bring about a condition of the heart that will cause the patient to strongly believe himself the victim of serious heart disease. He will suffer from palpitation on the slightest exertion, sometimes even when quiet; there will be shortness of breath, an uneasy sensation, sometimes amounting to absolute pain, in the region of the heart, sometimes extending down into the left arm. There will be a distressing consciousness of the existence of the heart, the presence of which should be unrecognizable to one in good health. We would strongly urge upon those who experience these symptoms, and who are users of tobacco to give it up for a while and note the effect. It must be borne in mind that no definite rule can be laid down, as to what is meant by *excessive* use of tobacco; moderation in one will mean excess to another, so that each must be a law unto himself in the decision of what is meant by excess.

CONSUMPTION.—A Congress for the special study of this disease was recently held in Paris, from the proceedings of which we learn that in Asia Minor, where the disease is very prevalent, it is attributed to the free consumption of milk and nearly raw meats. The disease is there considered to be contagious, and all articles used by the sick are destroyed. It seemed to be the sentiment that the idea that consumption is hereditary is erroneous. The following propositions were unanimously adopted.

"Every effort should be made by means of circulars, lectures, etc., to warn the laity of the dangers of acquiring consumption by the use of the flesh and milk of diseased animals, and to instruct them as to the best means of avoiding these dangers, and of escaping contagion through various articles used by those sick with the disease.

Special watchfulness is necessary in the case of dairies, to prevent the contamination of the milk by that coming from a diseased cow."

PREVENTIVE MEDICINE DURING THE VICTORIAN ERA.—Dr. Thorne Thorne has published in book form his inaugural address, delivered by him before the Epidemiological Society of London under the title of "The Progress of Preventive Medicine during the Victorian Era." It gives an admirable account of the growth of knowledge as to zymotic diseases during the last fifty years. The author traces the effect of the various Acts of Parliament concerning vaccination on the community, and shows the saving of life which has been effected as the result of them. He especially dwells on the advantages which accrue to children by compulsory vaccination in infancy, and gives the results of compulsory revaccination in Germany. The volume is an admirable *resume* of all that is known concerning the causation of epidemic maladies.

HAY FEVER CURED BY WEARING A WIG.—Dr. Rumbold writes as follows (*American Practitioner and News*): "A large proportion of persons who are afflicted with hay fever are bald headed, and the scalps of very many of them perspire profusely on the slightest exertion. With such, a very slight draught of air is sufficient to bring on a paroxysm of sneezing. An acquaintance, who had the misfortune to be quite bald, informed me in 1871 that he cured himself by wearing a wig. He felt an improvement on the first day of wearing it, and did not have an attack after that season. Of course he continues to wear the wig."

SEWAGE DESTROYERS NUISANCES.—A case of some public interest was recently tried in Liverpool (says the *Journal American Medical Association*). The plaintiff was the owner of some property adjacent to which the corporation of Blackburn had erected a destructor for burning the sewage of the town, and against the use of which he sought an injunction, alleging that the process was a nuisance to him and his tenants and injurious to his property. After consultation the case was settled by arbitration, judgment being given to defendants on the claim, but they to make certain alterations in the destructor, and to pay costs for the plaintiff.

PARASITES IN FISH.—Among the more recent discoveries of scientific research is that of the presence of parasites in fish. Of these tiny eel-like creatures ten kinds are recognized in the fish of the Mediterranean Sea, the Atlantic and Indian Oceans. They are generally found in the hollow part of the fish's body, the cavities of the star-fish's respiratory organs being a very favorite abode. Sometimes, however, they attach themselves to a part of the fish where life is not so easy a matter for them; for instance, they have been found in a pearl-oyster, buried in a curl of the shell. These parasites do not endanger the life of the fish on which they live, as they feed on the microscopic organisms which are washed into the cavities of the fish by the sea-water—eating their messmates, as Van Beneden says.—*The British Medical Journal.*

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ALCOHOL AND CRIME.—In a recent communication to the Academy of Medicine on alcoholism and criminality, M. Marambat stated that in examining the history of three thousand condemned persons he found that, of vagabonds and beggars there were seventy-nine per cent. who were confirmed drunkards: that of assasins and incendiaries there were from fifty to fifty-seven per cent., those convicted of indecent assault, fifty-three per cent.; thieves, swindlers, etc., seventy-one per cent.; and, finally, in acts of violence on persons there were eighty-eight per cent. drunkards, and seventy-nine per cent. in acts of violence on property. Among youths under twenty years of age, drunkards are nearly in as great number as adults, the difference being only ten per cent.

DEGREES IN SANITARY SCIENCE.—In the United Kingdom the opinion is becoming more prevalent and popular that medical officers of health should hold degrees in sanitary science, in addition to their medical degrees. The University of Madras has now instituted a degree in sanitary science. The candidate for the degree must have passed the examination for the degree of M. B. and C. M., or L. M. S., and must present certificates of having attended courses in hygiene (not less than forty lectures), general pathology (not less than forty lectures), analytical chemistry (practical course of not less than six months) and one course of sanitary engineering. The candidates are examined in organic, inorganic and practical chemistry, experimental physics, vital statistics, general pathology, including bacteriology, hygiene, sanitation and sanitary engineering, and drawing and mensuration.

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"THE DANGERS OF KISSING."—Dr. R. W. Corwin, of Pueblo, Col., solicits material for a paper which he is preparing on this subject. He asks the following questions, which any of our readers may do him a favor by answering:

1. "Do you believe it possible for disease to be contracted by kissing?

2. "Do you know of any instance where disease has been contracted or transmitted by kissing? If you do, will you be good enough to give me a synopsis of the case?

3. "What is your opinion regarding kissing of children?"

ILLEGITIMATE BIRTHS IN FRANCE.—It would seem that, says the *London Hospital Gazette*, if the French be, as in England is generally admitted to be the case, the most immoral people of modern times, France is nevertheless the country with the smallest proportion of illegitimate births. According to some statistics recently published, the proportion is as follows: Bavaria, 22 per cent.; Austria, 11 per cent.; Sweden, 10 per cent.; Prussia, 8 per cent. and France 7 per cent. These figures prove, at any rate, that the morality of a nation is not to be calculated from the number of illegitimate children. Indeed, the inference may be just the contrary, for as nations (like individuals) become more dissolute they acquire the pernicious science of preventing the physical consequence of their misconduct.

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KALA-AZAR.—Kala-azar is the name of a dread malarious fever that occurs in the districts of Goalpara and the Garo Hills of the Province of Assam. In the last Administration Report it is shown that this disease was the cause of nine out of twelve suicides, and the Chief Commissioner confesses with regret that all that human skill can do seems to be useless in combatting this dreadful disease, and the Deputy Commissioner says: "The miserable lot of a sufferer from kala-azar can hardly be surpassed under any conditions of time or place; treated as the possessor of a contagious and infectious disease, a drone in spite of his will, and his existence as such resented; growing weaker and weaker with each succeeding month, in constant pain, it is not to be surprised that the wretched creature should seek his end."

DIPHTHERIA AND TYPHOID FROM CITY MANURE.—Before the Philosophical Society of Glasgow, in April last, Dr. D. Pride gave instances of the spread of typhoid fever in a rural district by the use of city manure for agricultural purposes. With regard to a typical case, he said that the patients appear to have imbibed the poisonous germs with the water obtained from a well in a meadow, and to a moral certainty, this water derived the germs from the city manure spread on a sloping field immediately above the meadow. The conclusion amounts almost to a demonstration that, as this manure was brought from the city, it obtained its germs from some of the fever-breeding centres of this great city.

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A "WHAT IS IT" DISEASE IN MICHIGAN.—A mysterious disease has appeared in Rodgers City, Mich., according to recent advices, which say that recently a mysterious malady attacked several persons in that village, and its ravages have grown to such proportions that a panic has seized upon the people. The disease somewhat resembles cholera, and attacks all classes without regard to the conditions which surround them. The bowels are first affected. This is followed by a black vomit, and ordinarily death ensues in thirty-six hours. There have been as many as nine deaths in a single day, and the disease is spreading. Physicians are wholly at a loss as to how to cope with it, the usual cholera remedies having no appreciable effect. The authorities will have an investigating committee from the University of Michigan look into the cause of the epidemic.

CONTAGIOUS DISEASE IS A CRIME.—Yellow fever is not a disease, but a crime, says the *New York Herald*. The same is true of diphtheria, small-pox and other disorders. Ben Butler taught New Orleans how to stifle yellow fever, and not to have learned his obvious lessons is to have invited all the misery that falls upon our Southern friends. In New York, with the incessant hacking at Broadway, which has been going on for months and threatens to endure forever, we are preparing for a pestilence. A ride up Broadway, besides the fever and pest holes which line the street, is as perilous to life as to have galloped in Sheridan's cavalry charge at Winchester. If we had a government in New York that was not in so many respects beneath contempt, there would be no such danger. Reading what we do about the South, we can realize its extent and our criminal compliance in provoking it.

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ELECTRIC PROSTRATION.—"Electric prostration" may be called a new disease. It troubles workers under electric light. Severe cases are reported from Creusot, France, where an electric furnace is used for quickly heating metals. The light exceeds 100,000 candle power, and the men suffer from it, not from the heat. After one or two hours the workers have a painful sensation in the throat, face and temples, the skin becomes copper red, and an eye irritation begins that lasts forty-eight hours, the discharge of tears being copious. After five days the skin peels off. Dark-colored glasses somewhat mitigate the effects of this tremendous light, but not entirely.

HYGIENE OF STREET CARS.—We recently entered a horse car in this city and we precipitately left it, for there came upon the scene a woman, whose appearance gave strong evidence that she was but convalescing from small-pox. We would suggest to the managers of our street car lines, that they should instruct the conductors to refuse all such persons entrance to the cars. It is true that conductors might sometimes err in diagnosis and reject some innocent person with a non-contagious skin disease, but it would be better that this should happen a dozen times, than that one small-pox . convalescent should be allowed to ride in a crowded street car.

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THE POWER OF THE IMAGINATION.—Dr. Durand, wishing to test the practical effect of mind disease, gave a hundred patients a dose of sweetened water. Fifteen minutes after, entering apparently in great excitement, he announced that he had by mistake given a powerful emetic and preparations must be made accordingly. Eighty out of the hundred patients became thoroughly ill and exhibited the usual result of an emetic; twenty were unaffected. The curious part of it is, that with very few exceptions the eighty "emeticized" subjects were men, while the strong-minded few, who were not to be caught with chaff, were women.—*New Orleans Picayune.*

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BELVA LOCKWOOD the "equal rights" candidate for President has never worn corsets, and she attributes the remarkable uniformity of her good health to this fact.

DEATH IN THE COURT PLASTER.—The "isinglass court plaster," that is so much in vogue with the laity and dilettanti medicals, is a material most plenteously pregnant for evil. It furnishes an ideal atmosphere and pabulum for bacteria, and has sent many an unfortunate to the ground. It is questionable whether it can be disinfected so as to be safe. Phlegmon, pseudo and true erysipelas are its most usual companions. Its most frequent victim being the accommodating and officious person (or his friends) who carries it about his person for emergencies, and who dispenses with a "lick and a stick."—DR. A. R. JENKINS, in the *Annals of Surgery*.

THE USE OF TOBACCO.—The *Lancet* makes a distinction between what it calls the use and the abuse of tobacco. The man who can say: "I always know when I have smoked enough; if I go beyond the just limit I lose my power of prompt decision," is one, it suggests, who had better not smoke at all; but a moderate use of tobacco soothes the senses, and leaves the mental faculties free from irritation and ready for calmly clear intellectual processes. When this is not the effect produced by smoking, the weed had better be eschewed.

DIPHTHERIA AND COW DISEASE.—The investigation of an epidemic afforded the following remarkable facts: Certain cows had suffered from an eruption on the udders; persons using this milk were affected with a modified form of diphtheria; other members of the same families, who used other milk, were not affected; and when the cows recovered their milk ceased to be injurious.

THE REFORM OF CIRCUMCISION.—The Israelites of Paris recently appointed a commission of surgeons, under the presidency of Zadoc Kahn, the Grand Rabbi, to consider what modifications might advantageously be introduced in the ritual of circumcision. They have published rules looking to more thorough cleanliness of the operator, of his instruments, and of the infant, and have decided to do away with the sucking of the wound after the operation.

ORIGIN OF THE MEDICAL AND SANITARY SERVICE IN RUSSIA.—Catherine II., of Russia, is said to have established, by imperial ukase, in 1762, hospitals in the cities and large towns for the reception of cases of contagious disease. She also established the foundling asylum in Moscow in 1764, and a home for the aged, and hospital for chronic diseases in St. Petersburg. Finally, in 1779, she opened an asylum for the insane. Previous to her time, it is said, there was no public medical service in that country.

TYPHOID DISEASE IN CALDWELL OHIO.—Advices from Caldwell, Ohio, state that for about a month an epidemic disease having some of the characteristics of typhoid and malaria has been prevalent in the town. The population of the place is about 1800. Cases of the disease have occurred in almost every family, and 25 deaths have occurred. Caldwell, it is said, has no drainage to speak of, and it is thought that the disease is due to bad water. The dispatches state that no strangers visiting the town have been attacked.

WATER-PURIFICATION BY LIME.—A man living in the shade of the Catskill Mountains has entered upon a new branch of business. He heard that well water could be purified with lime, so he emptied a bushel and a half into his well and felt blissful and happy. It turned out that, because of the dryness of the season, there was only three feet of water in the well, and ever since his experiment he has been selling a good article of whitewash to his neighbors at two buckets for a cent, and walking a mile and a half to the creek for drinking water for his family.—*New York Graphic.*

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DECLINE OF SMALL-POX IN ENGLAND.—Dr. Henry Thorne has called attention to the fact of the gradual decline of small-pox in England in the past 50 years. From 1838 to 1842 the deaths from small-pox in England amounted to 57.2 per 100,000; in 1880–84 the death-rate was 6.5 per 100,000. He thinks that vaccination has not only a direct influence in causing this reduction in the number of victims to small-pox, but that it has also a tendency to decrease the liability to the disease of children of vaccinated parents.

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DISINFECTANT. — The *American Pharmacist* says: A very good disinfectant for stables and slaughter-houses is a mixed chloride and hypochlorite of zinc. This mixture has the advantage over chlorinated lime, that it does not have the disagreeable odor that the lime has and therefore is a much better preparation to use in a slaughter-house, on account of preserving the meat free from an odor.

PHOTOGRAPHY IN HYGIENE.—Instantaneous photography was recently made to play an important role in the conviction of an offender against sanitary laws in New York City. The individual in question was charged with maintaining a nuisance in the shape of a smoking chimney; he denied the charge; but the complainant offered in evidence a photograph of the smoking chimney. As the camera cannot lie, the nuisance was established. This case opens up a new field of usefulness for photography.

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WATER FOR LIVERPOOL.—A stupendous plan for supplying the city of Liverpool with water, says the *Sanitary News*, involves the removal of a whole Welsh village, including woods, cottages, churches, etc., this immense space to be devoted to a reservoir four and one-half miles long by half a mile to a mile broad, and eighty feet deep. There are to be three lines of pipe, each sixty-eight miles long, with filtering beds and secondary reservoirs; and the cost of the aqueduct alone is estimated at $15,000,000.

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POISONING BY UNRIPE POTATOES.—A large number of soldiers in a regiment stationed in one of the French fortifications recently exhibited symptoms of poisoning by belladonna. An investigation undertaken to discover the source of the poison showed that it could not be in water or wine drunk by the troops, for all the garrison had the same. In the absence of a better explanation, it was attributed to the eating of some unripe potatoes containing solanine.

TUBERCULOSIS TRANSMITTED FROM MAN TO POULTRY.—The chickens belonging to a certain family, one member of which was suffering from pulmonary phthisis, were found to be almost all diseased. M. Cagny (who reports this case), learned that the sick man was in the habit of walking in the garden, and it had been noticed that the chickens eagerly seized upon the matters expectorated by him. The chickens had tuberculosis of the liver, and it was found necessary to sacrifice the entire flock.

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CREMATION IN MANCHESTER.—The Formation of a Cremation Society for Manchester (England) has been determined upon at a largely attended meeting held in that city. A provisional committee has been appointed. A list of about 60 persons favorable to the movement was submitted, including several clergymen, medical men and others. A large number of ladies have joined the Society.

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SANITARY KIOSKS.—The International Hygienic Society has opened two kiosks for ladies in London. These will afford writing and reading rooms, and two large swimming baths, surrounded by recreation grounds. It is proposed to establish fifty similar places in London for ladies, about one hundred in the city for men, and swimming and shower baths in East London.

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DAMPNESS in walls is detected, according to J. Nessler (*Chem. Ztg.*) by placing against it a thin sheet of gelatin, which will curl away from the wall if damp.

SUPPOSED ICE-CREAM POISONING.—At the annual banquet of the alumni of Marietta College, Ohio, held in the latter part of June, a number of persons were made ill after eating ice-cream. Five persons have since died, the last one on August 6, and another is still dangerously ill. It is said that the cause of the sickness will probably be investigated.

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SOUTHERN QUARANTINE.—Dr. Jas. E. Reeves, of Chattanooga, Tennessee, has accepted a commission from the State Board of Health of that State, to go all along the Southern line, to examine the quarantines, State and municipal, in order to perfect its own. The selection is an excellent one, and will doubtless result in very valuable service to the State and its people.

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DANGEROUS SOFT DRINKS.—There are twenty patients in St. Michael's Hospital, Newark, N. J., suffering from lead poisoning. All of them, the physicians say, contracted the disease by drinking beer drawn through lead pipes or through the use of soft drinks. In fact, it is stated that there are over two hundred patients in the various hospitals and under private treatment suffering from the same cause.

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A DANGEROUS POLISHING SUBSTANCE.—A man was recently arrested in Brunn for selling a plating powder, which he recommended to servants for polishing and plating copper cooking utensils, etc., and which, upon analysis, proved to be composed of nitrate of mercury and prepared chalk.—*Zeits. f. Nahs. Untusuch. und Hygiene.*

GARRETTS LESSON IN HYGIENE.—A recent publication in the *Phila. Times* (Sept. 16) traces the sad fate that has overcome the descendants of the late sturdy John W. Garrett, and in it we find another argument in support of a pet theory of ours. It has become a matter of universal note that the sons of great men, in this country, rarely equal the achievements of their fathers and the explanation has usually been found in the fact that since the incentive to work (necessity) does not exist with the son as it did with his father, his faculties are not developed. A faulty education is blamed. But we have a notion that the true explanation is to be found in the fact that so much vital force is consumed in the every-day prodigious work of the *self-made* American that he has but little left to transmit to his children. Doing everything in a hurry, nervous and fidgety, his children are constructed on a hurried principle, as it were, and their organization lacks perfection.

From the article referred to, we learn that John W. Garrett's youngest son has been an imbecile from birth and none of his children have displayed anything like the physical or mental vigor of their progenitor. William H. Vanderbilt was but an inferior representation of the old Commodore, while the present generation, though very worthy men, are not men of affairs at all, their railroads being managed by another; and how extremely rarely do we hear of the sons of our great statesmen, soldiers, financiers or railroad magnates, equalling the ability of their fathers. Yet, education and unwillingness for work are not always to blame, for in many instances we will find these sons ambitious, willing, eager to follow in the footsteps of their fathers, but they do not seem to be endowed with the requisite natural ability. Is it not true that most of the great men of our day, in all walks of life, are the sons of farmers, the offspring of men whose mental vigor, (unimpaired because but little strained) has been stored up, increased and transmitted unimpaired to their children. Of course there are exceptions to this rule, but they are so infrequent as only to prove the rule. Can such a condition be remedied? In a measure, we think it can. If an impaired mental vigor is transmitted, what there is of it can be cultivated by an observance of hygiene, particularly by raising your children as the intelligent farmer does his, so that the inherited deficiency may be in a great measure, compensated for. This hint is thrown out as food for reflection.

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MUSCLE BEATING.—Massage has come to be a recognized procedure in curative medicine and we believe that it would prove immensely serviceable were it universally available, in establishing and maintaining that vigorous, robust state of health so essential to a successful warfare against disease. But the expense of, and conditions incident to the practice of massage, make it a procedure practically available only in cases of sickness. But a most excellent substitute for it may be found in the "Muscle Beaters," which Mr. John E. Reubsam, of Washington, D. C. has invented and offers for sale. They consist essentially of india-rubber tubes or balls, so arranged on elastic sticks as to simulate more or less closely the hand as employed in the beating movements of massage. They undoubtedly have the power of distinctly affecting the local circulation in the part beaten with them, and produce no pain or bruising. For the maintenance of nutrition in paralyzed limbs, for the warming of cold feet and other portions of the body which suffer from lack of circulation, for the stimulation of muscles affected with chronic rheumatism, as in chronic lumbagos, they are serviceable. We really take pleasure in recommending these "Muscle-Beaters" to our readers, for we believe they will derive much benefit from their use.

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DISEASE IN BOOKS.—The man who is not prevented from turning book leaves with a wet finger by fastidious refinement may well pause for fear of microbes. The authorities at Dresden have been investigating the question whether circulating libraries are a medium for the spread of infectious diseases. They rubbed the dirtiest leaves of the books, first with a dry finger and then with a wet, microscopically examining the product in each case. In the first case, scarcely any microbes were found on the finger; in the second case, plenty! Though all these appeared to be of a non-infectious character, the Committee winds up with a recommendation to readers not to wet the finger in the mouth for the purpose of turning over the leaves.

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CARING FOR HEAD AND LUNGS.—As nights grow cooler all women who are in the least rheumatic or chilly should sleep in blanket wraps over the night gown, preventing aches and colds caught by tossing the arms over the head, as well as the loss of sleep that often comes of disturbed circulation (says Shirley Dare in *The Press.*) People who use their brains habitually, teachers, writers, artists, must keep warm as the saving of their abilities. They must have fires early, and use foot-warmers by day and night, and dress like Esquimaux if necessary; or congestion of the brain or lungs is the penalty. The inflammation of the lungs which carried off George Eliot and Mrs. Browning was descended from the chilliness and poor circulation which these brain workers had borne for years.

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A CAUTION ABOUT HERBS.—Shirley Dare contributes papers to the *Phila. Press* that possess much merit from a hygienic point of view, but in a recent article (Sept. 16), she (or he) puts forth a statement that calls for a word of explanation. This paragraph is found:

> "There is no doubt that Diana of Poictiers owed the long freshness of her beauty to the skilfull use of herbs as part of her daily regimen. If anyone is disposed to sneer at this "wort-cunning," I will only remind him that for generations the digitalis, the medicine of the fox-glove flower, which kept General Sheridan alive for months, was slighted as utterly as other weeds which bide their time patiently to be of use."

Lest some of our fair readers should be tempted to try digitalis as a "beauty preserver," we would remind them that digitalis is a powerful drug, potent for good when its use is indicated but equally potent for evil when its use is not needed. It prolonged General Sheridan's life because his heart was diseased and the drug thereby indicated, but its *popular* use would be a most fatally dangerous practice.

INVESTIGATION OF YELLOW FEVER—Dr. Paul Gibier, the young physician whose investigations of the anti-cholera system of Dr. Ferran were described at the time of the 1885 epidemic in Valencia, left France Sept. 23d for Florida, where he intends studying yellow fever. He comes with an official mission from the French Government and will go at once to Jacksonville.

Dr. Gibier believes that yellow fever is a local affection of which the first cause is the development of the microbe in the intestines. But we cannot too strongly urge upon our readers that this question, not only with yellow fever, but with all diseases wherein we find a microbe, is still *sub-judice.*

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WORKING FOR PURE DRUGS.—Prof. Albert P. Brown, Secretary of the State Board of Pharmacy, is about to begin war upon the dealers in patent medicines who sell drugs of less strength than authorized by the formula laid down in the United States "Pharmacopœia." The articles that are mostly adulterated are spices, cream of tartar, gum arabic, solid extracts, laudanum, sweet spirits of nitre, and paregoric. The country grocers will also get into trouble, as the law prohibits the sale of drugs by any one within a half-mile of a drug-store.

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PRESERVE YOUR INSTRUMENTS.—To preserve your instruments from rusting, immerse them in a solution of carbonate of potash for a few minutes, and they will not rust for years, not even when exposed to a damp atmosphere.

MILK REGULATIONS.—New regulations in regard to the sales of milk in Berlin, went into effect on August 1, last. Every vender is to have a license, and the milk is classified as "full (pure) milk," "half milk" and "lean milk." This is much like the London classification of eggs. There they have "new-laid eggs" or "first-rate eggs," "fresh eggs" or "moderately good eggs," and "eggs."

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SANITATION IN BULGARIA.—Bulgaria, according to Dr. J. Bradel of Sophia, has now a well organized sanitary service. There is one chemical laboratory, in which the work is almost exclusively medico-legal and sanitary. The medical officers of health have, among other duties, that of inspecting animals intended for food, and of investigating any complaint against a seller of food articles.

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HOW BOSTON MILK IS TASTED.—When the suburban milk trains reach Boston (says *The Phila. Times*, Sep. 16th) an inspector knocks out the wooden stoppers of the milk cans, tastes the milk that adheres to them to ascertain if it is sour and puts them back without more ado. Such a practice is not only disgusting, but dangerous as well, for disease germs might be thus conveyed to the milk.

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ANTISEPTIC SOAP.—Prof. Auguste Neverdin recommends the following formula for the manufacture of a reliable antiseptic soap: Sweet oil of almonds, 72 parts; soda lye, 24 parts; potash lye, 12 parts; sulpho-carbolate of zinc, 2 parts; essential oil of roses, 9.5 parts.

DISEASES OF WINE-TASTERS.—A German medical paper says ; The diseases of wine tasters were studied by Donnet, of Bordeaux and Dr. C. Marandon of Dijon. Wine-tasters are frequently suffering with disturbances similar to alcoholism, although the claret tasters do not swallow the wine, but on the contrary, reject it, and even rinse their mouths afterwards. In one case of Dr. Donnet's a man 32 years old used to taste every day thirty or forty samples of wine, occasionally liquors and rum, without ever swallowing any part of them. After two years he became very excitable, lost his appetite, did not sleep well, and suffered with disturbances of sensibility, pains in the breast, a feeling of weakness, difficulty in breathing. He improved after abandoning his profession, although a nervous debility still remained, as noticeable by the facility with which he was set in tears. Another statement made by Dr. Donnet is the great number of apoplexies in Bordeaux, where many persons drink one and a half litres of wine with each meal. This number exceeds the number of apoplexies in any city of the world. Dr. Marandon did not notice any symptoms of intoxication in Burgundy tasters, although some of them would swallow the samples. He remarks that tea-tasters always swallow some tea, and this fact, he says, explains the nervous symptoms they are affected with.—*Mining and Scientific Press.*

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WOOLEN UNDERCLOTHING.——We always read with interest anything that will tend to throw light on the question as to whether woolen or cotton is the best material to wear next the skin. The cause of wool is ably championed by a writer in one of our exchanges, who, after adducing many strong arguments favorable to woolen goods says: "It is certainly a boon to mankind that, under the Jaeger System, woolen fabrics have been produced which are entirely free from irritating qualities and injurious dyes, and that they can therefore be worn by both sexes of all ages and in all seasons, by the most sensitive, with a measure of comfort and security to health far exceeding that afforded by any other material.

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HOFF'S MALT EXTRACT—For many, many years Johann Hoff's Malt Extract has enjoyed a reputation exceedingly extended in this country. It is rarely that we find a business continuing to prosper for many years in these days of competition, for as soon as any particular article achieves a reputation for itself, just so soon do rival articles, backed with more capital, energy and new blood spring up to drive it from the field. It is, therefore, with a feeling that there must be unusual merit in the article that we notice that Tarrant & Co., of New York City are still (as they have done for many years) importing and finding a ready sale for Johann Hoff's Malt Extract.

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THE BERLIN Sewage Farms now yield a profit of two per cent. on the capital invested—a very favorable result, considering all things.

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BUENOS AYRES is to have a water supply, the cost of the works for which will be fifty million dollars.

A PERMANENT WHITE-WASH.—Lime slacked with a solution of salt in water, and then properly thinned with skim milk, from which all the cream has been taken, makes a permanent white-wash for outdoor work, and, it is said, renders the wood incombustible. It is an excellent wash for preserving shingles and for all farm purposes.

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CHEVREUL AT 103.—M. Chevreul, the French savant who has just reached his 103d year, begins to feel a little shaky, though still able to walk up and down stairs. To a lady who recently complimented him upon his juvenility he replied: "You are too good, madame: but I feel that I am going down the hill. What would I not give to be 80 again."

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THE HYGIENE OF CONSTIPATION.—A pint of warm water taken on an empty stomach in the morning, is an excellent remedy for habitual constipation. It dissolves the fecal matter and stimulates action, thereby giving a normal action without pain. If the tongue is coated, squeeze a lemon into the water and drink without sweetening.

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DECAYED FRUIT IN CHICAGO.—An ordinance is pending in Chicago making it a misdemeanor for any person, excepting agents of the Board of Health, to gather decayed fruit in the streets of that city. It is charged that certain street vendors buy and sell the stuff.

LOOK TO YOUR HOUSE.—Did you air your house before you moved back into it? If you did you may have saved a doctor's bill and if you emptied all the water-pipes and sluiced the drains you may easily have saved another, truly says *The Press*.

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AN ANALYTICAL DEPARTMENT OF THE HYGIENIC LABORATORY of the Military Medical Academy of St. Petersburg is to be established for the detection of adulterations in goods sold in the markets.

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"BOWEL COMPLAINT" IN NEW ENGLAND.—All over New England the reports of the various local boards of health show great prevalence of bowel troubles the past summer. The mortality among infants has been simply appalling.

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THE LIQUOR LAW OF IOWA.—The new Iowa liquor law requires pharmacists to have a permit authorizing them to administer oaths, and each purchaser must swear that he wants the liquor for lawful use.

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EPIDEMICS AND NEGLECT.—The *Sanitary News* says: There has not been a single epidemic this summer that was not directly traceable to neglect of ordinary sanitary requirements.

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SEWAGE VENTILATORS.—Tall factory chimneys are used as sewage ventilators in Carlisle, England.

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THE ex-Empress Eugenie has given instructions to have her body cremated when she dies.

CORRESPONDENCE.

A CITIZEN'S SANITARY COMMITTEE.

Editor ANNALS OF HYGIENE:

Will you allow me to make a suggestion which I am sure will meet with favor from many of your subscribers?

The large number of cases of Typhoid Fever which we have had this summer with unusually heavy mortality and the number of cases of infant mortality, which is directly due to want of sanitary precaution, shows us that the death rate for this city could be reduced to a very remarkably small percentage if we went about it in the right way. I would suggest the establishment of a "Citizen's Sanitary Committee," to be composed of one or two prominent gentlemen from each ward and thereby secure the coöperation of those gentlemen outside the medical profession who are impressed with the importance of securing for this city pure drinking water, good sewers, a fresh and pure supply of milk, unadulterated food and well-paved streets.

These gentlemen, coming in direct contact with the representatives in Councils in their wards, their influence and encouragement would be a great aid to the Board of Health, and certainly their services would be highly appreciated by a majority of their suffering fellow-citizens.

J. M. Keating, M.D.

[We are heartily in accord with the suggestion of Dr. Keating, and we believe that its realization would be productive of incalculable good. We should be glad to hear whether his idea meets with the approval of our subscribers.—ED.]

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THE ANNALS OF HYGIENE.

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COMMUNICATIONS.

THE HYGIENE OF THE NOSE AND THROAT.

BY DR. CARL SEILER,
Instructor in Laryngology and Lecturer on Diseases of the Throat and Nose, at the University of Pennsylvania.

Our changeable climate, with its sudden and extensive variations in temperature and atmospheric humidity, as well as our artificial mode of life, with its over-crowded school-rooms, dry furnace air, sudden unavoidable exposure to draughts of cold air, and above all, with its nervous excitement predisposes us, and particularly those of us who live in cities, to colds and chronic diseases of the throat and nose. But these external influences are not the sole causes of chronic nasal catarrh and sore throat as well as of hoarseness or loss of voice and over-indulgence in eating, drinking and the use of tobacco, and want of sleep, abuse of the vocal organs, and many other causes, must be named as aiding in the production of these ailments.

A few words of warning, a few simple directions how to avoid colds, and how to live so as to aid in the restoration to health of the diseased parts will, we trust, be welcome to the readers of the ANNALS, and may, if observed in their daily life, save them many an annoying cold in the head or even worse.

In order to understand the full significance of these ailments, many of which appear trifling and not worthy of much notice, but which may, in time, become very serious and dangerous to life, it will be necessary to say a few words in regard to the functions which the nose and throat perform when in a healthy condition in the human economy before we can enter upon the subject proper of this article.

The nose is commonly supposed to serve no other purpose than as an ornament to the face and as the seat of the sense of smell. Yet in reality it performs a much more important function, viz.: the preparation of the air for respiration, for all the higher animals, including man, are nose-breathers, and use the mouth as an ingress and for the air in respiration only under exceptional circumstances or when the nose is obstructed.

The air, as it passes through the nose, is cleansed of all solid impurities, such as dust, the coarser particles being caught by the screen of bristle-like hairs growing in the nostrils, and the finer and lighter ones are arrested by the slimy mucous which covers the membrane lining the nasal cavities, so that very little, if any, dust reaches the lungs.

Bony projections, springing from the sides of the nasal cavities, curled upon themselves like a turban (called the turbinated bones) and covered by a spongy tissue, the meshes or holes of which are filled with warm blood, increase the surface over which the air flows in its passage through the nose, so that a considerable amount of heat is given off and the air is warmed. This spongy tissue, as well as the thin mucous membrane overlaying it, allow some of the watery portion of the blood to ooze out, which, together with the secretion of the mucous glands, forms the watery mucous with which the whole interior of the nose and the upper part of the throat is bathed. The amount of watery secretion is very large, and has been estimated at a little more than a pint a day. As the inspired air passes through the nose, it absorbs some of its moisture and this humidity is raised to the due point, while the surplus passes unnoticed down through the gullet into the stomach. Thus the main function of the nose is to moisten, warm and filter the inspired air.

The mucous membrane of the nose is also supplied with very sensitive nerves, some of which, situated high up in the nose, produce the sensation of smell when any substance giving off an odor is present in the air, while the others are very easily irritated by other substances having no odor, which irritation shows itself either in sneezing or other disagreeable sensations, thus giving us warning that the air is impure, and not fit for respiration. Thus the nose acts also as a sentinel and safeguard, for if the air is bad and filled with odors, we perceive it at once by the sense of smell, or if it is filled with gases having no odor, but being nevertheless injurious, sneezing, a sense of fullness in the nose, headache and other symptoms, produced by the sensitive nerves, will be noticed.

That portion of the throat which is visible through the open mouth and which comprises the lower end of the palate, the tonsils and the upper portion of the pharynx or gullet, serves no other purpose than as a passageway for the air from the nose and food from the mouth in their respective downward course in respiration and swallowing. Lower down, out of sight, except by means of an instrument, called a laryngarcope, is situated the larynx or voice-box, which forms the upper end of the windpipe. This organ, which is lined with a delicate mucous membrane, serves, like the nose, several purposes. By the shutting down of its lid, called the epiglottis, it prevents particles of food from entering the windpipe in the act of swallowing, and by means of two pairs of bands which are stretched across its opening, it regulates the in and out flow of air in respiration and particularly in speaking and singing. The lower of these two pairs of bands can be brought very close together and set in vibration by the flow of air from the lungs, thus producing the voice. However, only the sound of the voice is produced by these vibrating bands, called the vocal cords, while it is qualified both in singing and speaking by the resonant qualities of the nasal and oral cavities.

Any change in the nose or throat must necessarily, more or less, interfere with the proper performance of their respective functions, and thus the whole system is made to suffer. If, for instance, the nose is obstructed even only partially, respiration has to be carried on through the mouth, and in consequence the air is not properly prepared for its reception by the lungs, not being warmed, moistened or filtered, and the mucous membrane of the throat and bronchial tubes becomes irritated and inflamed. This produces cough, hoarsness, shortness of breath, and a scant, glary expectoration. At the same time the secretions from the nasal mucous membrane become thick and more copious, accumulating in the posterior portion of the nose, above the palate. The voice becomes nasal in quality, and, if the obstruction is permanent, various other symptoms show themselves, which are remote, but may all be traced to either the effect of pressure upon the sensitive nerves in the nose or else to the inadequate air supply, for the air cells of the lungs will not be fully expanded by the dry cold and dust-laden air breathed through the mouth. Thus we notice headache, indigestion, general debility, loss of memory, failing eyesight, pain or buzzing in the ears, and deafness. This latter symptom is caused by the fact that the tubes leading from the inner ears to the nasal cavities, called the Eustachian tubes, become clogged with the thick mucous and cannot perform their particular function, which is to carry fresh air to the inner ear cavities.

Such partial or complete obstruction of the nasal cavities is usually produced gradually by repeated colds in the head, causing the spongy tissue over the turbinated bones, to become permanently swollen. The irritation caused by the pressure of this swollen tissue against the partition of the nose causes it to either bend over to one side or gives rise to bony excrescences on its surface, which help to obstruct the air channel. Or the obstruction may be caused by bending or breaking of the partition or rupture due to a blow or fall on the nose; and, finally, it may be caused by small tumors, called polypi, which grow from the turbinated bones and hanging by a slender stem into the nasal cavities, may be seen through the distended nostril. These polypi are like the swellings of the turbinated tissue, caused by previous repeated inflammations.

On the other hand, an inflammation of the mucous membrane of the nasal cavities may result in a shrinking up of the spongy tissue, and a drying up of the watery secretion of the nose, so that the nasal cavities become unnaturally large and dry. Under these circumstances the nose can again not perform its proper function, and the system suffers in a like manner, as when the nose is obstructed. There is, however, a distinctive feature in these cases which is not noticed in the others, viz.: an accumulation of large scabs of dryed mucous, which become putrified and emit a disagreeable odor, and cause, if not frequently removed, ulceration of the mucous membrane and often decay of the bones of the nose. The air passing constantly over this putrid mass of mucous, and, being absorbed by the lungs, infects the blood with the deleterious products of putrefaction, and persons suffering with this form of nasal disease have chronic blood poisoning. For this reason, and also on account of the nerve irritation in the nose by the scabs and the drying up of the mucous membrane acne, or pimples on the face, are frequent symptoms, which can only be relieved by the cure of the nasal disease.

The above described conditions are known under the generic name of nasal catarrh, and require for their cure the intelligent treatment of a physician, but can, in many instances, be prevented by observing the hygienic rules laid down further on.

A barking cough, scant and glary expectoration, hoarseness, or loss of voice, and a pain in the throat, which, together with the cough, appears after speaking or laughing, are all symptoms of a chronic inflammation of the larynx with its vocal cords, which is due either to the irritation of the mucous membrane by the unprepared air in mouth-breathing, or else to a faulty use of the voice in speaking or singing, or, finally, it is caused by a severe cold in an enfeebled constitution, or on account of a repetition of the exposure, becomes chronic instead of getting well. The same causes produce the sore throat so common among children, in which the back part of the throat, and particularly the tonsils, are inflamed, which latter not infrequently have abscesses formed within them. This condition is known as quinsy. A person who has had quinsy once is very apt to have a return of it with almost every exposure to cold, and the result is a permanent enlargement of the tonsils, which is not only annoying but also dangerous, inasmuch as it interferes with the resonant quality of the aural cavity, making the voice sound thick, and it also interferes with proper nasal respiration, by obstructing the back part of the nasal cavity, particulary when the so-called third, or pharyngeal tonsil, is also enlarged, which is frequently the case.

(TO BE CONTINUED)

CREMATION OF GARBAGE.*

BY J. BERRIEN LINDSLEY, M.D.,
OF NASHVILLE, TENN.

Very few persons outside of the limited circle whose official duties place them in constant contact with the offensive topic have any conception of the enormous amount and varied character of the filth generated by the daily life of a great city.

Hence they do not understand why it is that practical sanitarians are everlastingly harping upon *cleanliness* as the *sine qua non* of civic health ; and earnestly calling for stringent legislation and large appropriations to enforce and carry out sanitary ordinances which shall maintain a pure soil within the city limits.

Practitioners of medicine understand that pure air, or impure air, has immensely to do with success or failure in the treatment of all diseases. Hospital and prison history for the past century, and infant mortality in cities and towns has made this a familiar fact. Few, however, understand that it is perfectly possible to render the atmosphere of even the largest cities pure enough for infants and invalids to grow and recover.

As showing the great quantity and variety of polluting material occurring without pause within the city limits of a city, two or three examples may be given.

Baltimore, August, 1887, estimated by police census, had a population of 437,155. The amount of night-soil delivered at the dumps for the year ending December 31, 1887, was 51,107 loads, or 10,221,400 gallons. Probably more than half the inhabitants use water-closets, which carry off an equal amount. The dead animals, etc., removed during the same year, were :

Total number of dead animals, . . .	25,249
" " " fowls, ...	9,074
" " " fish, ...	23,574
" " " cart-loads of dead fish, vegetable and other offal removed from various docks, .	1,067
" number pounds of decayed meat condemned, ...	1,495
" number dozs. of eggs condemned,	60 7

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* Abstract of a paper and the discussion thereon, published in the *Jr. Am. Md. Asso.*

Richmond, population 100,000. The report of contractor for removal of garbage, or kitchen refuse, year 1887, shows total number of loads carried off, 2,680 = 72,200 bushels.

Memphis, population 62,335. Number of loads of garbage removed in 1887 was 29,120.

These examples are selected at random. To keep the city clean is the principal work of municipal governments, and requires more expenditure of money than all other objects combined, excepting schools and police.

The city filth naturally falls into four main subdivisions—street sweepings, night-soil, dead animals, and garbage. The latter alone concerns us at present. The definition of garbage is refuse animal and vegetable matter from the kitchen. Every household is a workshop for garbage. In the country and small villages many a family is poisoned by the careless accumulation of the same near the well or sleeping apartment. In small towns it is mainly got rid of by feeding to swine and cows. In larger communities by carting off and polluting harbors or rivers.

Very recently, a great improvement has been introduced, to wit, the destruction of garbage by fire. The object of this paper is briefly, but emphatically, to call attention to a great sanitary device which is not getting into public use near so rapidly as it ought.

In the Second Report of the State Board of Health, of Maine, 1887, the Secretary, Dr. A. G. Young, says: "Of the several methods which have hitherto been in use (for removing garbage), it may be said that none of them are free from serious objections. If the garbage is carried any considerable distance into the country its transportation is attended with considerable cost. If buried, it still often remains a nuisance by contaminating the air or polluting the water in the neighborhood. If utilized in part as food for swine or cows, there is sometimes inflicted upon the community which sends it forth a retributive penalty in the shape of an unwholesome milk and meat supply.

"In the case of a sea-board town, if it is sent seaward, the garbage may depart from the place of its origin never to return again, but in large part it is strewn along other coasts.

"The great desideratum has seemed to be some method which would not require a costly transportation of the garbage, or necessitate the defilement of our sea-shores, but which would radically and ultimately destroy it near the place where it is produced.

"Within the last few years a new method of disposing of garbage has been written and talked about, and to a considerable extent put into operation and practically tested. It is the method of destroying, or cremating, garbage by means of furnaces specially constructed for that purpose. Where these furnaces have been put into use, there is pretty uniform consensus of testimony as to their success. When rightly built they have done their work satisfactorily, and generally at considerable less expense than has hitherto been incurred in disposing of the garbage otherwise. But little or no cost is incurred for fuel to run the furnace, as the garbage is dried more or less before it is burned and is made to consume itself. The cost of labor in attending the furnace is not great, and generally there are no unpleasant odors given off in the process of burning.

"This method has not been much used in this country, but in Europe, and particularly in England, it has been extensively employed. Dr. O. A. Horr, a member of this Board, who has lately returned from Europe, made special inquiry in regard to garbage cremation in England, and all he could learn convinced him this system is a success in that country. The garbage furnaces in many of their towns have been in operation many years, and, in conversation with the Health Officer of the City of London, he learned that there are now forty-five of the English towns which make use of this method of garbage destruction.

"In this country, as far as I know, the experiment of destroying garbage by means of a furnace constructed especially for that purpose, was first tried on Governor's Island, New York Harbor. A description of this garbage-cremator was given in the *Sanitary Engineer*, of August 13, 1885, by Lieutenant Reilly, at that time Acting Assistant-Quartermaster, U. S. A., at that post." This description is reproduced in the report above quoted.

The city authorities of Wheeling were stimulated to action by those of Bellaire, Ohio, on the opposite side of the river, but in close proximity. The dumping of night-soil and garbage from Wheeling into the Ohio river had become an intolerable nuisance to the inhabitants of Bellaire living just below. No alternative remained but to abate the nuisance. A similar alternative will soon be forced upon many of our riverside cities and towns. Law will decide that rivers do not belong to those who happen to dwell near the source, but equally to all below, and that the upper few have no right to deposit their filth in floating columns upon the lower many.

In the "Report on the Sanitary State of Montreal, for the year 1886, will be found an interesting narrative in this connection, giving instructive details as to cost, showing the extent of the work to be done and the complete success of the refuse crematories, and also of the night-soil crematories constructed by Mr. Wm. Mann. Dr. Louis Laberge, Health Officer of Montreal, read an elaborate paper on this topic at the meeting of the American Public Health Association, in Memphis, last November, which will be found in the thirteenth volume of "Public Health," now in press.

It thus appears that Wheeling and Montreal are the pioneer cities in arousing public attention to the cremation of garbage and night-soil. Other cities are taking hold of the experiment with much enthusiasm.

All who are concerned in this important subject will look forward with great interest to a paper on cremation to be read at the Milwaukee meeting of the American Public Health Association, November next, by Oscar C. DeWolf, M. D., the eminent Health Commissioner of Chicago.

Dr. Jones, of Cincinnati, O., referred to the epidemic fever at Bellaire, O., which was due to the faulty method of garbage destruction. With all health officers he agreed that an improvement in this would conduce greatly to the extermination of such epidemics; and only by burning the garbage was a possible source of disease eradicated.

Dr. W. L. Schenck, of Kansas, agreed with the ideas expressed in the paper, and believed there was no other way as yet discovered to solve the problem of garbage destruction than by cremation. He was brought up on the Miami River, which was then a beautiful stream; now it was so polluted by garbage thrown into it, that the water could not be used for domestic purposes.

Dr. Lee, of Pennsylvania, said, apropos of sanitation by fire, a good many who are present at this meeting attended the meeting of the American Public Health Association when the late Dr. Germer, of Erie, described the methods of sanitation by fire employed at the pest-house at Erie, Pa.,—a can of kerosene and a match. There appeared to be no doubt that the future will demand sanitation by fire. Pittsburgh had to meet the question, and devised a very satisfactory refuse crematory, in which he had seen wet tan bark consumed, and this was certainly satisfactory evidence of the efficiency of the crematory.

Dr. J. B. Hamilton, Surgeon-General U. S. Marine Hospital Service: In each family the means of cremating garbage exists. A garbage cart has not called at my house in several years, because all refuse is burnt in the kitchen fire. I do not believe an ordinance compelling this means of garbage disposal would be feasible, but think it might be accomplished through the authority vested in health officers. The improvements in the mechanical arts would justify the hope for the invention of a simple apparatus which could be employed in each house; something that would dry the garbage and then burn it. It seems to me that this plan of disposal is too generally neglected in household sanitation.

Dr. H. P. Walcott, of Massachusetts: I consider that Dr. Hamilton has more nearly hit the nail on the head than anyone. The object of the community is to do that which the individual cannot accomplish without unnecessary labor or expense on his part. It is for this reason that the combination of the efforts of many individuals constructs sewers and lays water pipes. But when it comes to garbage, each one has the means of completely destroying it himself. When the impossibility of completely destroying the fæces of typhoid fever, etc., by the means most commonly employed, even by bichloride of mercury, is considered, sanitary and health officers should bestow more attention on the only method which promises the successful attainment of this end, viz.: fire.

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SCHOOL HYGIENE.

BY D. F. LINCOLN, M. D., OF BOSTON, MASS.

(Continued from page 395.)

VI. SCHOOL-DESKS AND GYMNASTICS.

Some additional points are here to be given :

1. Support for the feet. This needs special attention in the case of little children. Wooden foot-rests ought to be given when needed.

2. Curves adapted to the body. The seat ought to be "curved," *i. e.*, hollowed. The back in American chairs is usually sloped so as to furnish an easy support in lounging. Some such chairs are so persuasive that one can hardly sit upright in them : this is a great fault, for the school ought to teach an upright carriage of the body. The chairs used in Germany, though the patterns vary greatly, are commonly made upon the principle of supporting only the lower half of the spine, usually by a short, nearly upright, board. Many of our own chairs might be greatly improved by an approach to this pattern, the principle to be followed being this, that the back of the chair should fit the person closely at the lower part, where the spinal column needs support. I have seen a

young lady in a high school suffering a good deal from pain due to the want of support at that point, which was relieved by placing a cushion there, behind the pelvis. No seat that can be devised is suitable for long continued occupancy by healthy children. Their bodily growth is impaired, and deformity is caused by the mere want of bodily activity. A cure for the crooked spine is not, therefore, to be had by carefully adjusting the size of the desk to that of the seat, and by giving the appropriate curves to the latter, but by developing the whole muscular system so that due support shall be given by nature. The deformities which come from this source are more frequent than is thought. Feeble, pale, quiet, over-dressed, a class of girls passes you, "filing" from room to room. You see one in a dozen with rosy cheeks, evidently a country girl. Their shoulders are all round, and they have the droop forward which indicates a want of muscular vigor and deficient expansion of the chest. A part of the impression thus given may be due to the subdued tone and manner of the school room. The same girls, however, "stay in at recess;" they ride home in the horse-car; their leisure is spent in piano practice, and in going to parties.

There is a potent remedy for these evils in the hands of school boards: it is the practice of gymnastics. In this single measure the entire list of evils called "school maladies" is attacked by giving increased force to the entire physical system. Let pupils in normal schools be first made to appreciate the benefits of the system by applying it to them; let them learn to discard sundry superfluities of dress, by being taught the comforts of "gymnasium dress;" let plain sense, under the title of hygiene, be taught as more important than scientific physiology. If this class of persons can be converted, a permanent benefit accrues to all their pupils in future.

But to return to the subject of desks:

3. In classes, however well graded, great differences of height are noticed. In accordance with this, each class-room in a graded school ought to have at least two sizes of desks; three are desirable.

4. Height of the desk. When the pupil sits upright, and the arms swing freely, the elbows will be just below the edge of the desk, and when bent in writing will barely clear the edge. Girls require a desk from one-half to three-quarters of an inch higher.

5. The edge of the desk must come up to a line just over the edge of the seat, or must overlap the seat by an inch or two. This keeps the child from stooping.

Nos. 4 and 5 are of importance as tending to prevent deformity. Too high a desk raises the right or left shoulder unduly. A desk at a distance from the pupil's seat compels him to take a bad posture.

What remains to be said of school gymnastics may be said here. A good deal may be done with no apparatus at all in the ordinary class-room, Light gymnastics, comprising movements of the arms, are to be practised daily, more for the benefit of the change and for stimulating circulation than for development of body. An hour twice a week will suffice for a more thorough course, with a trained special teacher, in a room devoted to the purpose. No heavy apparatus is recommended–light wands, dumb-bells of wood, perhaps small clubs. It has been found best for classes exercising together in the Amherst college gymnasium to give up the heavy gymnastics altogether; much more so in schools. Then there are the "free exercises," including proper methods of sitting, standing, lying, walking, running, jumping, as well as exercises in concert, games, etc.

"The aim of these free exercises is to call into action in turn the greater part of the voluntary muscles of the body; and with an intelligent, earnest teacher to direct them, there is no end to the modifications and combinations that can be made, calling for precision, and strict attention, and skill on the part of pupils." *

A very valuable work can be done at once, with no special apparatus, and with comparatively little training, by heads of schools who have at command a spare room or a hall with movable seats. The members of upper classes can be instructed by him with perfect success in marching, facing, and a variety of exercises of too complicated a nature to be carried on in the schoolroom.

There are two present obstacles to the adoption of a complete system of training—the expense and the want of trained teachers. The calling of a gymnastic teacher, in fact, is a laborious one. But the matter is one of prime importance, especially in our city schools; and teachers may aid materially in the adoption of a thorough system by trying to use the means now in their power.

VII. AFFECTIONS OF THE NERVOUS SYSTEM.

School life is capable of doing much good, as well as harm, to the mental and nervous life of scholars. Overwork, work performed under pressure or at bad seasons of the year, work done in a state of anxiety, are among the causes of injury. The influence of competition for prizes is acknowledged to be bad in a great many cases.

"Double promotions" ought to be watched with care.

As regards over-work, a change in public feeling has come about of late, which has largely led to the abandonment of home study for pupils under the age of (about) twelve years, and has cut down the hours of attendance at school to five in the day. One innovation of modern origin requires to be criticised—the use of a single session, closing at one or two o'clock, instead of the morning and afternoon session. There should be one long recess in such a session, and arrangements for luncheon may enter with profit into the consideration of the school authorities, for it is unnatural for a growing youth or girl to fast six hours on a stretch amidst vigorous exertion of mind. The fact that some have no appetite for a lunch constitutes ground for suspecting that the school life or work is responsible for the want of appetite.

It is a serious grievance of teachers and scholars that the time of year when the work is hardest is the spring and early summer, the season alike of review, examinations, diplomas, promotions, prizes, all of which is made more trying by "spring sickness" and premature summer heats. At the close of a year's work there should be an approach to relaxation of effort. How difficult it is to secure such a relaxation is well known to teachers. Many a teacher is ready to faint with fatigue before the welcome rest comes. The

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* Dr. J. J. Putnam.

children do not now suffer so much, their work being rather irregular than severe, for the most part, at those times.

On a matter so familiar to the public as mental over-work and strain among school-children not a great deal need be said. It is probable that social dissipation does a great deal more harm than school work. Girls, of course, need more watching than boys, for they more readily give up their habits of out-door exercise, and too often have no in-door work whatever to compensate for it. Even among teachers this fault is marked. Their toil is an anxious one, and they require relaxation as much as any profession, but they too often fail to recognize the need. The writer was told by a prominent "kindergarten" teacher, who has teachers under her and instructs others in kindergarten work, that it is a frequent fault among her teachers, as well as her adult pupils, to suppose that they could work in the morning in teaching, attend a class in the afternoon, and go to parties in the evening, the fact being that in this kind of work no teacher ought to consider herself capable of any serious, responsible undertaking outside of her kindergarten; and the kindergarten hours are from *nine* to *twelve* o'clock!

Without doubt this is very near the truth. Teachers who have five hours' work a day are to be considered as having done a day's work. Seldom, however, is the work completed in that time, for under the new régime a great deal of work is written by the children, and has to be looked over and corrected at home by teachers.

Among positive injuries to the system, and symptoms of injury, the following may be named as often due to school fatigue:

Debility, want of appetite, dyspepsia, sleeplessness, irritability, headache. Other troubles, of less frequent occurence, are menstrual anomalies, irritable spine, hysteria, chorea, neuralgia. A case of epilepsy is known to the writer, which recurred after five years of health, in a vigorous youth who overworked himself in competing for a prize in *gymnastics*.

Complaints peculiar to females have often been charged to the injury received in going up and down stairs. Derangement, including excess, painful periods, or deficiency, as well as local displacements, have been noticed. It is certain that the existence of many flights of stairs is complained of, and that young women avoid rooms in the upper stories of boarding-schools in many cases. It may be well to give here a summary of the evidence collected by George E. Smith, M.D., in 1874, in respect to a number of such institutions. The replies amount to the following, substantially:

Answer No. 1. The complaints named are not usually prevalent: there are restrictions upon undue haste in going up or down stairs: should prefer to have no dormitories above the second story.

2. They are very frequent, and are due to this cause.

3. High buildings are bad if there is carelessness in running up and down, not otherwise; improper dress and dissipation are the chief causes.

4. Similar to No. 3.

5. Rarely due to stairs; due to dissipation: should prefer two-story buildings.

6. Not due to stairs, but to lacing, heavy skirts and over-work.

7. Dress, corsets and stair-climbing are far more to blame than study.

8. Stairs are a great evil while girls are dressed as they are now.

The matter has been touched upon in another division of this essay.

(TO BE CONCLUDED.)

INFLUENCE OF ICE AND ITS IMPURITIES IN DISEASE.

BY H. E. BEEBE, M. D.,
SIDNEY, OHIO.

The use of ice in summer for domestic purposes has become so general, that it may now be considered one of the necessaries of life. Its use in cities has increased until there are very few persons who do not depend upon it to some extent, either for drinking purposes or to preserve for a short time various articles of food; while in the country, ice houses are becoming more numerous every year. The question of purity then becomes one of vital importance.

With their usual tenacious adherence to error and superstition, a majority of people hold to a firm belief in the theory that water in freezing mechanically rids itself of all impurities, and that ice must therefore, no matter from what source, be free from the dangers attributed to polluted water.

But the fallacy of this has been exposed by numerous experiments. A simple test has been made by the writer, which any one can essay for himself. A pond, depending for its supply altogether upon rain and surface drainage, furnished ice for a farmer. During the summer, cows and hogs would spend a great part of every day in the water. Calling the owner's attention to this source of danger, or at least of impurity, he gave the usual formula "water always purifies when freezing." To convince him, a piece of ice was put into a clean bottle which was tightly corked, and set in the rays of an August sun, for some hours; on removing the cork a very distinct barn-yard odor was manifest. True, no sickness has resulted in this family that can be traced to the ice: but every physician is cognizant of numerous cases in which Providence allows the rural communities to thrive and flourish under gross violation of all hygienic requirements, such as would decimate a city in a single season.

Suppose that such a body of water be frozen to the bottom, or suppose it be saturated with a soluble substance, partially frozen, and the resulting precipitation found to be less than the amount of water so frozen would contain if melted, as has been tried; in either case chemical analysis is unnecessary to show that the ice cannot be pure. It is possible for various hurtful substances, both organic and inorganic, to be included in this way. Of course, in winter that portion of water nearest the surface is least impure, unless in case of shallow or swift streams; and this, together with the undoubted fact that water does tend to disentangle foreign elements to a great extent when freezing, has given rise and support to the theory. But careful analysis has shown many impurities, and the microscope has shown another source of danger that chemistry does not detect—namely, the various forms of bacteria. These become sterile when dry; and in pure water they cannot live; in water only slightly impure they may not increase. But with moist surroundings, with decomposed animal or vegetable substance to feed upon, they develope with marvelous rapidity, each one under the most favorable conditions being able to increase by division and subdivision to seventeen millions in the course of twenty-four hours.

Experiment has shown that they are not removed by the most careful filtering. Boiling will always destroy them but water thus treated must be oxygenated before being good for drinking, and the chances are that in this process germs may be introduced as harmful as those removed.

Freezing does not kill them, for Dr. Prudden has found twenty thousand living bacteria in a single cubic centimeter (about one-third of a teaspoonful) of ice. In one case not all the bacteria were killed after freezing one hundred and three days; in another, large numbers were found in a piece of ice which had been in a solid state for eleven months.

It is settled beyound dispute that the germs of typhoid and other fevers are carried to a large extent, if not almost wholly, in water, and these germs were the most abundant in the ice examined by Dr. Prudden; while epidemics of diphtheria are due to the same cause.

Nor does the danger lie only in small or stagnant bodies of water; the use of ice from Onondago Lake was forbidden in Syracuse by the City Board of Health, and in the discussion that ensued the fact was brought out that such ice was charged with various disease-producing germs brought in with Syracuse sewage. The ice from the Hudson River below Albany has been proven dangerous from a similar cause.

Certainly such impure ice may be used for years with no evil result; so may water or any other disease-bearing substance. Developments follow only when the conditions are favorable which is more apt to be the case with an invalid than with a person in good health.

It may, in view of these facts, be stated as an axiom that ice from water that is not safe in its fluid state should never be used for drinking purposes. Localities not favored by the near presence of pure water, whence their supplies may be drawn at moderate expense, must depend upon ice made artificially from distilled water. This has other advantages, besides safety, over natural ice that must be hauled a considerable distance It can always be uniform in texture (loose or "snow" is far worse than solid ice to convey disease), frozen in blocks of convenient size for handling; there need be no wastage, or but very little; the cost of freight and enhanced price due to loss in transit is avoided. It can be produced, when the demand is sufficient to justify a considerable outlay for a plant, at a lower price than lake ice can be sold for at any considerable distance from the point of supply.

When persons must use such as they can get, and not such as they would like, two rules should be observed: First, never bring ice in direct contact with meat, vegetables, and such things, but use it to reduce the temperature of the space in which they are placed. Second, never put ice in drinking water, but the reverse; put the water in bottles or jars, and surround it with ice. It is easy to construct a cooler on this principle which will be as convenient as the kind now in use.

It goes without saying, that in surgery no ice is to be brought in contact with the wounded flesh unless its absolute purity is beyond all question. If such cannot be obtained it is best to rely upon other means.

Every summer the word goes the rounds in the newspapers—"Do not drink very cold water rapidly, or when heated;" and just as regularly do we hear of sickness, or even death, from this cause. Water at a temperature of about 40 degrees quenches the thirst more quickly than if colder, and can cause no injury or inconvenience unless used to a degree far beyond what is necessary.

THE HOME OF CHOLERA.

[Translated from the Arabic Medical Journal "Al-Shifa" for the "Albany Medical Annals."]

(THE FOLLOWING REMARKS BY J. A. S. GRANT-BEY, OF CAIRO, EGYPT, POSSESS UNIVERSAL INTEREST, BECAUSE THEY REFER TO A COUNTRY WHERE CHOLERA IS ALWAYS PRESENT, AND FROM WHICH EVERY NOW AND AGAIN IT STARTS ON ITS PESTILENTIAL MARCH TO DEVASTATE THE MOST REMOTE REGIONS OF THE WORLD.)

As a comfortable but delusive impression seems to be spreading with regard to the sanitary condition of India, and of Calcutta in particular, it may be well to direct attention to the actual state of affairs. It is impossible to speak of the filthy condition of the broad fringe of hamlets by which Calcutta is surrounded without using forms of expression which must seem exaggerated when judged by an ordinary standard. But the fact is there is no possibility of exaggerating either the horrors of the hamlet-world or the manifold dangers by which, owing to the lethargy of the local government, the city of Calcutta is encircled.

Far from matters being improved, they are rapidly growing worse, and the only effect of the trivial action into which the municipality has been goaded is to create a false feeling of security in certain quarters. That there will be a terrible awakening one of these days is the conviction of every one who has the slightest acquaintance with the subject and who brings to it an unprejudiced mind.

For some years past Calcutta has been fortunate in escaping one of those visitations which strike terror into the public mind, and reassert the devastating power of epidemic disease. But a peep at the hamlets will amply prove the folly of believing that the present immunity is likely to be more than short lived, for nothing has been done in the way of prevention that is worth one moment's consideration.

It has come to our knowledge that during the first week of December, 1887, a gentleman of Calcutta visited one of the hamlets in the suburbs of the city, and his description of its unsanitary condition was considered worthy of a place in the March number of *The Journal of the Health Society for Calcutta and its Suburbs*. We have thought that by publishing a *resumé* of what he reported our eyes might be sufficiently opened to the risk we run by being next-door neighbors, and that we might be on our guard against the importation of transmissible diseases.

He reports: I went to the hamlet called Kurryah, and it is conveying a very feeble idea of what I saw to say that the condition of the people is simply frightful. Here we have a group of closely built huts crowded with people. The land on the south side, not twenty yards distant, is used for curing skins. It is needless to say that the stench is sickening and that the air is thoroughly saturated with it. The whole area, including a number of foul places, drains into what seems to be a blind ditch, which is accurately described as a bubbling, scum-covered, seething mass of utter corruption. A few huts separate the ditch from two tanks, one of which is covered with green scum, and is used for bathing and for washing utensils, clothes, etc. This tank is separated from a second, to the east of it, by a "*bund*," or earth-dyke, about five feet thick, not thick enough, however, to prevent percolation. The water in these two adjoining tanks is at the same level, and percolation evidently takes place freely. The water in the second tank is free from vegetable scum, but it is not clear water, and it abounds with low forms of life. On my visit to this delightful(?) spot I had a companion with me, and the object of my search was to find out the sanitary conditions in the midst of which a recent and fatal case of cholera had had its origin.

The whole of the people of the neighborhood use the second of these tanks for a drinking-water supply. Further, we ascertained that from thirty to forty cases of cholera occur in the vicinity every year.

We had the tank water microscopically examined, and it was found to be teeming with life. Perhaps its worst feature was that the forms of low organisms which are to be found in fairly pure water were conspicuously absent. Under these circumstances the mystery is not that there is illness about the place, but that any one can live there in ordinary health, even for a few weeks.

Now I wish to lay stress upon the fact that there is not a word of this statement introduced for sensational effect. The picture is very far from being over-colored.

The hamlet here described is a real every-day aggregation of huts, neither better nor worse than hundreds of others. It is a thoroughly typical hamlet in all its wretched features—an ever-active centre for the propagation of the most dangerous forms of disease that threaten the health of a vast European and native community.

When, I would ask, will the municipality realize that its paramount duty is the removal of such plague spots? When will it begin in earnest to grapple with the evil which exists at our doors and threatens the public health at every moment? The fact I am most anxious to emphasize is that, in spite of all that has been said, and even of the stern remonstrances of the supreme government, the municipality has practically done nothing to even mitigate the unsanitary condition of the city, and to remove the reproach which is attracting to Calcutta the attention of the leading European authorities on sanitary matters.

We say the above is an instructive study for the Quarantine Board of Alexandria, because the narrative is by an eye-witness, and is not simply a telegraphic dispatch.

The Egyptian Sanitary Department may well congratulate itself that there is at least one other country in a worse sanitary condition than Egypt. But this is no reason why it should "rest and be thankful." There is yet much to be done to improve the demographic statistics of Egypt. In Cairo we are having just now a mortality of eighty per thousand, and it is on the increase; and who knows what it may be in the villages where stinking pestilential ponds serve for the water-supply to man and beast at low Nile?

A CONSIDERATION OF THE IMPORTANCE OF A KNOWLEDGE OF HYGIENE.

BY JOHN SHEPPMAN.

It is undoubtedly a deplorable fact that the science of hygiene is doomed to creep tortoise-paced into the minds of our intelligent citizens. The prevailing sentiment seems to be that this knowledge should be exclusively absorbed by physicians, and that they alone should have their heads "stuffed" with the invaluable laws of sanitation. While we may all readily agree that this subject should be universally studied, yet how few are willing to penetrate even below its surface. I have frequently heard educated men remark that fresh air, moderate eating, and sufficient rest, are the three essential, and governable rules of health, but which, (practically speaking), are merely the titles.

Let us peruse some of the immense writings which come under the head of "contaminated atmosphere," and how quickly, and wisely, we will abandon our former theories. How many thousands are suffering with what the doctors call "malaria," wrecking their systems with worthless compounds, when the true cause might be traced by a sanitarian to the decomposing contents of a slop-barrel. Now, while I do not propose to make this a long and tedious article upon the intricacies of sewer-gases, yet I do wish to impress upon the minds of my readers that most of our people are unconsciously inhaling these noisome gases, to which may be attributed the deadly ills, that so ravishingly devour such numbers of our populace.

Every intelligent housewife should be acquainted with all matters pertaining to the health of herself, and offspring; and should personally examine all parts of her abode, and particularly enforce upon her servants the importance of a clean, dry, and ventilated cellar. This apartment, which is seldom visited by the "master" or "madam," has been too often turned into a store-room for old refuse, by careless or ignorant servants, some of whom have even gone so far as to empty their garbage into the ash-pit; so that the unwholesome, germ-propagating stench would work its way to the upper floors, to be continually breathed by the unwary and delicate occupants. It is therefore very reasonable to believe that most of our avoidable plagues are born in this neglectful manner.

Let us now transfer our thoughts to a few appropriate illustrations of the uses and abuses of the second title. I remember meeting a gentleman at Saratoga last Summer, who had come all the way from Colorado, for the good of his health, who was suffering frightfully from dyspepsia, and who regularly drank his favorite spring-water, with as much apparent relief, as would justify a prophecy of a radical and an immediate cure. But, oh, how completely my opinions were reversed, when one day, while sitting opposite to him at the hotel table, I overheard the shocking selections—*a la carte*, which he was prescribing for the almost ruined functions of his stomach, and yet he claimed to be a man of judgment, thoroughly posted in hygiene, and who, I will wager, at the end of his sojourn, was wofully discomfited, and declamatorily condemned the efficiency of all the springs, to cure his 'self-imposed' malady. I have met other men who have dared to say that they were perfectly aware of the pernicious effects of diet upon the system, but who were endeavoring to accustom, or harden, 'as it were,' those delicate organs to perform a duty, which the eyes, and hands of man, would despairingly shrink from. Can we believe that these men are wilfully pursuing this suicidal course, or shall we philosophically stigmatize their bombastic ignorance? To say that a man will read, and study hygiene, and still disregard it, is an evidence that he does not fully comprehend its teachings. And then we have *sufficient rest*—two very expressive words, which I know are passed with a cursory glance, and a palatable sneer, "that all men have sense enough to rest, when their limbs become tired." To this I wish to emphatically add, that most men who perform physical labor, do not rest, until they have almost completely exhausted their vital forces. And that every moment, 'after the feeling of languor presents itself,' is a strain upon the nerves and muscles, which will, sooner or later, find its way to some serious disorder, that will ultimately bring its victim to a premature grave. Brain-workers should be particularly cautious in this respect, for that wonderful organ is acutely susceptible to many jars of irritation, and to the concomitant ills, which inevitably follow strenuous labor.

Let us, therefore, endeavor to observe, and practice the traditional advice of Ovid, who has said, "Take rest; a field that has rested, yields a bountiful crop. Remembering, also, that "*Majus est delictum seipsum occidere quam alium.*"

Another important adjunct to the foregoing lines—Where do you rest? Have you carefully surveyed the apartment into which you consign yourself for the greater portion of each night? Have you instructed the chambermaid to frequently air the mattresses, and bolsters, and to remove, nightly, before retiring, the odious contents of a cuspidore? All these seemingly petty matters have been too carelessly overlooked.

A gentleman, not long ago, informed me that if his wife began to read hygiene, some plumber would get a big job, and a heavy bill against him; but which, I asked, would you rather pay, a plumber, or an undertaker?

How many people would be qualified to protect themselves through an epidemic of small-pox? I have recently heard of a case of that disease, where several women in the neighborhood actually fumed their houses with sulphur, confidently believing that they were guarding themselves against the infringing germs.

Oh, let us arouse ourselves; let us be one mighty army warring against the elements of disease, so that our future generations will not be weak and cadaverous grovelings, but stalwart representatives of God's most perfect work, to stand abreast with the fearless men of the world, and not like our men of to-day, who, in the prime of life, in the illustrious moment when they have reached the topmost round of that bright eminence, amidst the lauding cries of a nation, do take unto themselves the garb, and the crown of fame, and shrink, wretchedly defenseless, into their untimely graves.

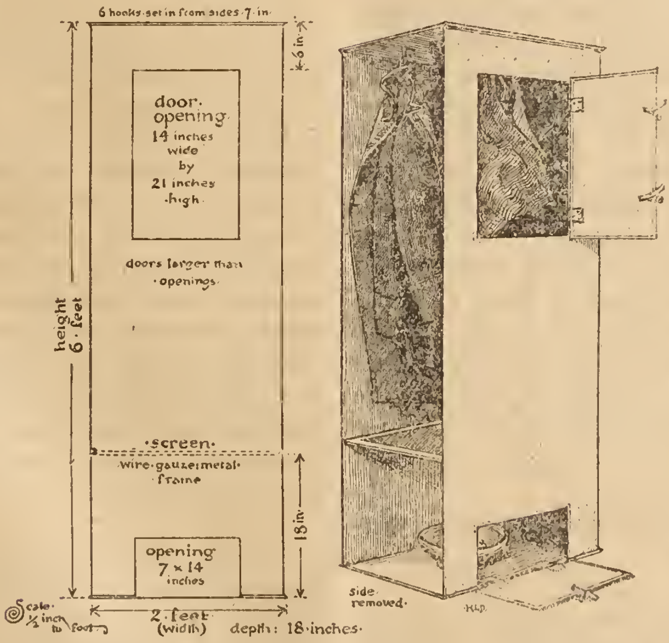
DR. E. MILLER REID has recently been elected to the Chair of Physiology and Hygiene in the Baltimore University School of Medicine.

AMERICAN PUBLIC HEALTH ASSOCIATION.—The next meeting of this Association will be held in Milwaukee, Wis., November 20th, 21st and 22d.

NOTE ON THE DISINFECTION OF PHYSICIANS' CLOTHING.*

BY ROBT. L. DICKINSON, M. D.

A simple, ready method is needed—and an inexpensive one as well. The man busy in practice will shirk cumbrous devices. If he has but to hang his suit on a hook, touch a light to a dash of alcohol, and close a door, he is altogether likely to carry out his good resolutions, and sterilize his clothing after every exposure. The galvanized iron closet devised by Dr. Chas. Jewett, which I have used for some months with much satisfaction, meets these indications. Certain modifications suggested by experience are added in this description.



Galvanized iron fumigating closet; elevation and perspective. The side is removed to show the interior, with the screen between the two compartments.

Few houses have spare closets which can be kept empty for this purpose, or so placed that fumes escaping would not greatly inconvenience the occupants of the remainder of the floor. But the metal box may be placed in any desired position, as in the yard or under the front steps.

The disinfectant used is sulphur. The employment of dry heat at 230° Fahrenheit for one or two hours is impracticable by any simple method which does not require watching. Steam saturates, and might cause shrinking. Chlorine acts only in the presence of moisture, under which condition the colors and texture of fabrics will be affected. Sulphurous acid gas is efficient, inexpensive and easily produced. It is endorsed by the writers on hygiene, by the National and local Health Boards, and by the Committee on Disinfectants of the American Public Health Association in their exhaustive report (Dr. Sternberg, Chairman, in *Phila. Med. News*, December, 1885).

Half an ounce is all that is required by the cubic air space of this closet, but I usually throw half a pound into the bowl to ensure the most complete saturation, and to allow of some leakage. An ounce of alcohol ignites the sulphur readily. More than a small quantity of alcohol should not be used for fear of the flames leaping up high —although danger of igniting the clothes is obviated by the screen.

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* From the *Brooklyn Medical Journal*.

The closet should be six feet high, two feet wide, and eighteen inches deep. A shorter closet brings the clothing down on the screen. The screen is made of ordinary wire gauze. The openings are kept as small as they conveniently can be. Should the upper door not close tightly a piece of cloth larger than the door can be placed on its inner side and lapped back over its edges, although this has not been found at all necessary in practice.

Four hours exposure of the clothing in this closet is probably sufficient, but the suit may well be hung up in the evening and left over night. It may be worn again in the morning without needing to be aired ; in such case the wearer scents sulphur faintly for some hours, but no one else is conscious of the odor.

The cost of this closet is about thirteen dollars.

◆

GLASS-BLOWERS CRAMP.—Attention has just been drawn to the fact that glass-blowers' cramp is a professional deformity of the hand. It consists in pronounced flexion of the fingers, occurring chiefly at the second joint In France it is called *main en crochet*, or *main fermee*. It attacks the majority of workmen and is most pronounced in the oldest. No remedy is proposed by Dr. Poncet, who has been giving great attention latterly to the subject.

TREATMENT OF FOUL SHIPS.—In order to stimulate ship-masters to aid in securing a clean ocean-going fleet, the following regulations concerning the treatment of foul ships has been adopted by the Marine Hospital Service, and will be observed at all National Quarantine Stations :

1. When a vessel arrives at any National Quarantine Station from an infected port, and requires disinfection, she will be subjected to *ordinary disinfection*, as provided in former regulations.

2. When any vessel shall arrive at a National Quarantine Station in such foul condition as to render her dangerous from a sanitary point of view, and is found to require cleansing and disinfection, having at any former time within one year been subjected to ordinary disinfection, such vessel will be required to undergo *extraordinary disinfection*, which, in addition to the ordinary measures, will include holystoning, scraping, the taking out of rotten wood, a second disinfection, and interior repainting, all of which will be required before granting a certificate of free pratique.

◆

BAD WATER FOR JERSEY CITY.—The *Engineering and Building Record*, October 20, 1888, protests against the pollution by sewage of the Passaic River water which is supplied to Jersey City, and declares that the water is likely to grow worse instead of better.

◆

GARBAGE CREMATION.—The Engle Cremator has been adopted and is in operation by the city of Des Moines.

◆

CINCINNATI has a crematory, constructed with all modern improvements.

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The State Board of Health is not responsible for anything appearing in this Journal except that which bears the official attestation of the Board.

EDITORIAL.

RELIGION AND HYGIENE.

Touching the subject of Professor Proctor's death, the *Catholic Mirror*, of Baltimore, says:

> "The death of Professor Proctor of yellow fever is an old story now, but it recurs to us, in connection with the thought of the arrogant claims that modern science makes, that Professor Proctor turned his back on the church because he regarded her claims inferior to those formulated in the testimony of his senses. And yet, believing as he did in science as the great panacea, we find him struck down by a disease which science cannot fathom or analyze. The unseen has grappled with the seen and conquered. What more does Professor Tyndall know of the plague than the monks of the middle ages whom he condemns? Of what use was all Professor Proctor's science as he lay helpless, priestless, perhaps prayerless, in the grasp of the yellow fiend?"

This quotation from a religious journal well illustrates one of the greatest obstacles to the progress of sanitation. It is a fact that among religious persons there still remains considerable remnants of the mediæval, barbaric, aye, even unchristian, idea that disease is a "visitation of Divine Providence," and that he who endeavors to prevent its ravages is flying in the face of God. Such an unreasoning, uncharitable, unjust, unkind and heathenish idea of Almighty God is unworthy of the intelligence that God himself has bestowed upon his creatures in this latter part of the nineteenth century. It is true that disease comes from God, as does everything else; sin really comes from the Most High; because, were it not for his assent, it would be impossible for any of us to be guilty of sin; but disease comes from God, as a punishment for our violation of those natural laws that He himself has established, and not, as many suppose and claim as a punishment for our sins, save in so far as we sin by failing to observe God's natural laws. The Almighty has established a natural code, and He has endowed His creatures with free will; we are at liberty to obey or disregard this code; if we order our lives in accordance with God's laws, then disease (properly called) would not be found among us; let us defy these laws, and disease and premature death is the penalty. Just as a violation of human laws brings swift punishment in its wake, so does the non-observance of Divine laws entail a speedy and terrible penalty. Thus far we are right in regarding disease as "a visitation of Divine Providence." But, it is certainly a very unchristian like conception of God to imagine Him as a being who desires us to be afflicted with disease, while it is much more in keeping with the idea of His Divinity, to believe that He has placed within our reach the means of avoiding such misery.

That He has done so, facts amply testify. To answer the *Catholic Mirror*, when it asks how much more we know of the plague of the middle ages than did the monks of that period, we need merely to say that we know this much more: that *the plagues of the middle ages are unheard of to-day*, and every sensible man knows that this fact is due to our improved methods of life. While we have not yet fathomed the intimate nature of yellow fever, we have, by the use of that reason with which God has endowed us, been enabled to learn how to negative its ravages and to make it a thing of the past. The Almighty has inevitably decreed that all must die sooner or later, but He has ordained that this death shall be from "old age," that comes sooner to one and later to another; He has not ordered but *allowed* that we die of disease, as the result of a neglect of His laws; He has, in His wisdom, allowed us to use our intelligence, so that to-day we *know* how to prevent very many diseases that were apparently inevitable and unavoidable to our ancestors of the middle ages. It is not for lack of knowledge how to prevent them that typhoid fever, diphtheria, cholera, small-pox and the like annually claim their hundreds of thousands of victims, but because this knowledge is not universally put into practice, and one reason for this is because of the opposition that is encountered from certain religiously inclined persons. We say this without any disrespect for religion, for no firmer adherent of Christianity can be found, but we do say, because we do firmly believe, that those who thus argue have but a poor and incomplete conception of the true meaning of Christianity. We have no sympathy with the man who will "turn his back on the church, because he regards her claims as inferior to those formulated in the testimony of his senses," but neither have we any sympathy with the man or the men who will find in the death of the former from disease an argument against the divine sanction of the efforts of those who are humbly, patiently, zealously, and with entire submission to the Divine Will, endeavoring to learn how God means that we shall avoid avoidable disease.

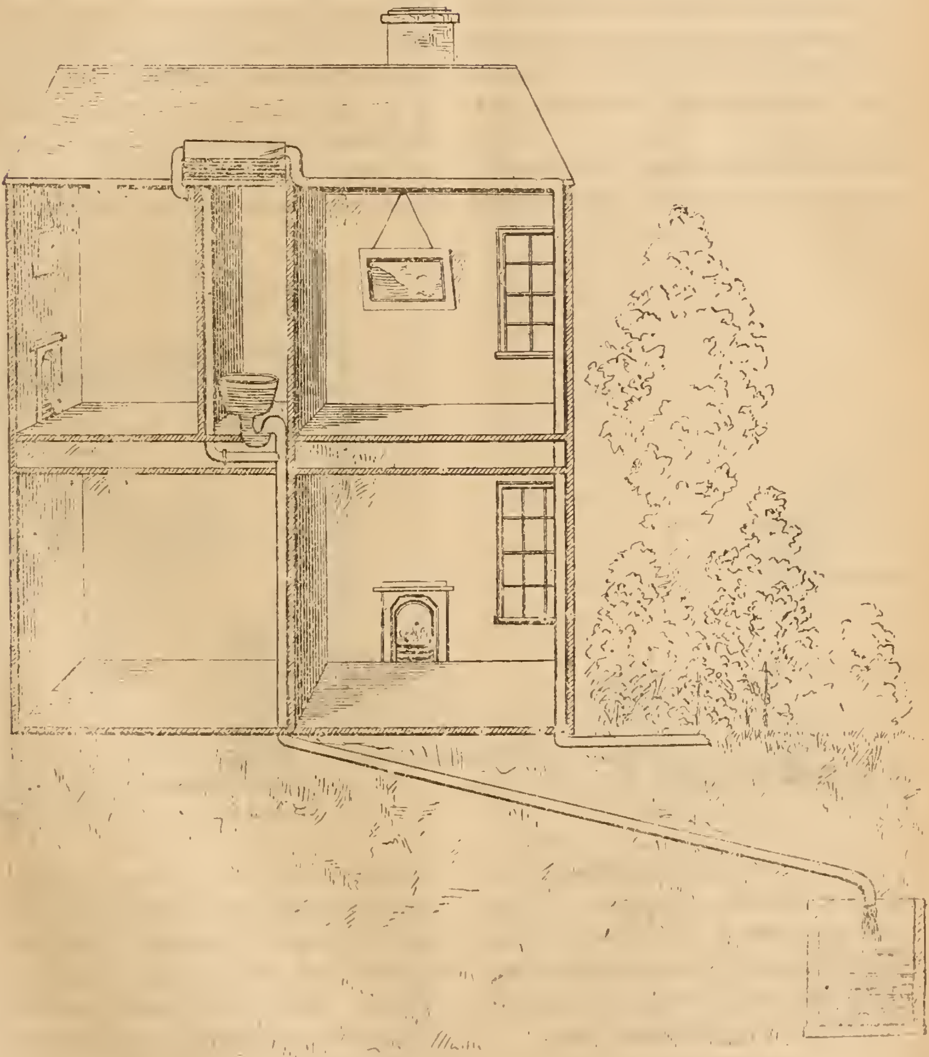
Let us have done with such unholy and unreasonable nonsense. There is nothing antagonistic in true science and true religion; the latter has always fostered and cultivated the former; science that conflicts with religion is not true science, it is but the imaginative efforts of a warped and strained intelligence. The science of hygiene, the science that is teaching us how to avoid disease and prolong human life is a *true* science, and there is nothing about it in conflict with religion.

OUR LIBEL SUIT.

It will be remembered that the Hygeia Water Company, of New York City, instituted a suit against the editor of this journal for damages for an alleged libellous publication, wherein it was shown that the analysis made for this journal of the water that they were selling did not coincide with the analysis published in their advertisements. The trial of this suit was set for last Spring. A day or two before the trial the counsel for the Water Company asked for a continuance. The case therefore went over to this Fall. It was to have been tried on October 15th. When we went into court, ready for trial, we found that the Water Company had discontinued the suit, Our readers can form their own conclusions.

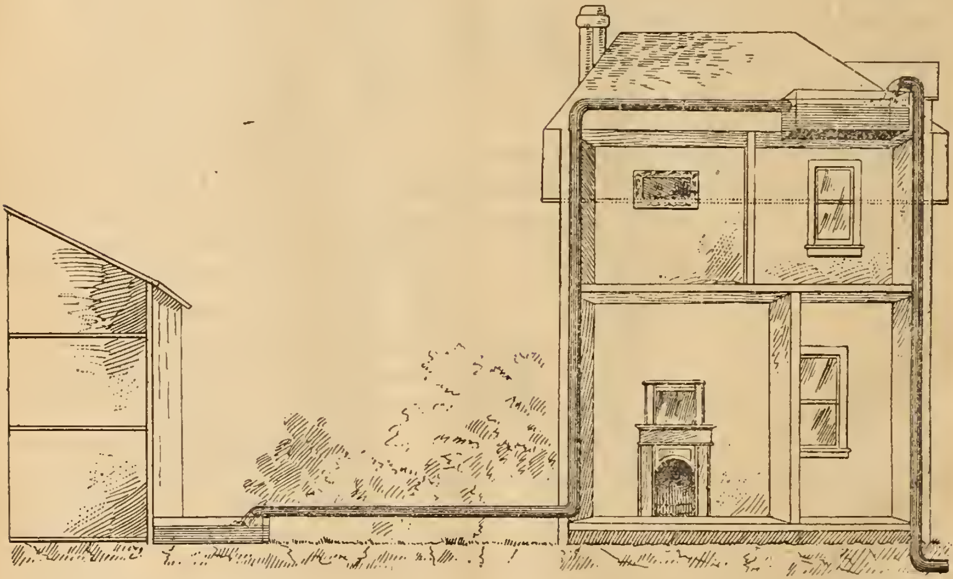
NOTES AND COMMENTS.

Bad Plumbing in a Doctor's House.—When the editor of this journal was looking at the house, in the country, in which he is now living he was told by the owner, a doctor, that the overflow pipe from the big tank in the third story was carried directly into the drain pipe, so that the latter was kept constantly washed out. Theoretically this was all right (though it would have been a great unnecessary waste of water), but practically it was all wrong, for we soon found that the tank was rarely, if ever, full to overflowing, the water being drawn therefrom about as fast as it was pumped in. The natural result was that this overflow pipe really constituted an



open connection between the cess-pool and the tank, whereby the foul gases from the former could readily pass back into the latter and, by means of the water and air, be disseminated throughout the house. As we did not own the house and were not warranted in assuming any expense we resorted to the temporary expedient of putting a cork into the outlet of the overflow pipe.

The next illustration shows us what should have been done. Here we see the overflow from the house tank carried to a trough at the barn. Thus, when the tank is overflowing, there will be a supply of water at the barn, and when it is not, only pure outside air can find its way up the pipe.



THE CARE OF MILK INTENDED FOR THE MARKET.—Dr. E. H. Bartley thus writes in the *Brooklyn Medical Journal:* There is perhaps no one article of food so necessary to the perpetuation of the human race in this climate, as milk; and no one article that does so much damage to the race. We are sometimes amazed when we are informed of the enormous consumption of this food, and remember that about one-third of the children born in the large cities are raised upon cow's milk. When we further consider the fact that about one-fifth to one-sixth of all children born in our large cities die before they reach one year of age, and that two-thirds of these are fed upon cow's milk in some form, we are convinced that it is no small responsibility that rests upon dispensers of this article of food. Statistics show that in New York and Brooklyn about one child in twenty is reported as dying from cholera infantum. It is admitted by physicians that unwholesome milk has a great deal to do with the large number of deaths among children. This is not all that is to be said.

It is scarcely necessary to remind those who have any knowledge of milk that it is a great absorber of all kinds of odors and gases. It very readily becomes sour or putrid when not properly cared for, and in this condition it sickens not only babes but grown people who drink it. There are on record numerous examples of epidemics of scarlet fever, diphtheria, small-pox, and typhoid fever, including thousands of deaths, produced by the poisons of these diseases carried in the milk. These facts should make every one who handles milk for the market feel the awful responsibility that rests upon him. These are sufficient reasons for the efforts that are made by Boards of Health to keep the milk supply pure and wholesome. The measures adopted sometimes seem severe, but the sufferings of the innocent babes demand them. Judges and juries must protect the lives and health of the community against those whose ignorance, carelessness, recklessness or dishonesty would sacrifice both.

I do not intend to intimate that all milk dealers are dishonest. Such a statement would be far from the truth. The most of them desire to deal only in a pure and wholesome article. Many fall short of their desire through ignorance or carelessness as to the dangers of impure milk.

By *impure milk* I mean that which is rendered unwholesome from any cause whatever. The principal preventable causes of unwholesome milk are: diseased, badly housed, kept and fed cows; filthy stables; dirty, improperly cooled, soured, partly churned or putrid milk, or milk that has been handled by persons suffering with some contagious disease, or that has been tampered with by skimming, watering or other process. As will be seen by the above, there is more danger of milk becoming unwholesome before it reaches the grocer or milk vender than from the addition of water. Milk contaminated by the air and filth of a dirty stable and from the cow's udders, or from the diseases of milkmen, or the cows themselves, is infinitely more disgusting and really dangerous than that to which a little clean water is added. The over-crowded condition of the cow stables in and near our large cities is a positive hindrance to the production of wholesome milk. Cows which have pasture lands to feed upon are generally healthy and give better milk than those which are crowded into badly ventilated hovels, such as are seen everywhere in the vicinity of large cities.

The following rules contain some of the most important guides for the protection of the dealer in milk, as well as for the protection of the public:

1. The milk of diseased cows should not be sent to market. Any condition that produces a fever in a milch cow should be regarded as rendering the milk bad.

2. The milk of cows fed upon distillery swill, or those fed entirely or largely upon fermenting brewer's grains, should not be sold for infant's food.

3. Cows should not be allowed to drink stagnant pond or ditch water.

4. Milk from cows that are overheated or worried at the time of milking should not be sent to market.

5. If the udders are dirty, they should be washed clean before milking.

6. The milk should be cooled outside of the stable, and the cans should be covered during the process to exclude air and dust. Milk should be kept at a temperature below 60° F., but ice should never be put into it.

7. Warm milk should never be received from the dealer, nor should the

can be left on the sidewalk in summer.

8. Milk should always be kept covered and should never be kept in an ice-box with meats or vegetables possessing an odor.

9. Ice-boxes, stores and wagons in which milk is kept should be kept clean and sweet by occasional washing with chloride of lime followed by clean water or soap and water.

10. When possible only full cans should be received. A small full can is better than a large one partly filled, as the agitation and churning of the milk is less in a full can. Avoid the unnecessary handling of milk. The necessary agitation of shipping and delivering is an injury to it.

11. Milk that has been brought back from the morning rounds should not be mixed with other milk; it should be cooled at once, and sold as soon as possible.

12. If milk is kept over night, a small portion of it should be boiled to see if it will curdle before it is sold.

13. Each and every dairy's milk should be tested daily.

14. It is best to make a contract with the one who delivers the milk to you to furnish that of a given test by the lactometer, say 105 to 110, and giving at least ten per cent of cream.

15. Milk which contains dirt settling to the bottom of the can, blood, offensive odors or taste, should not be sold to customers.

16. *Cleanliness* in the handling of milk *is absolutely essential to its wholesomeness.*

YELLOW FEVER CONFERENCE.—From Dr. G. P. Conn, who has been appointed the New Hampshire delegate thereto, we learn that a conference concerning yellow fever will be held in Washington in December, comprising representatives from the various state boards of health. It is expected that the Marine Hospital, Army and Navy Surgeons will participate in this conference. This meeting will be of the utmost importance, for epidemic diseases are national misfortunes, sadly interfering with the social and commercial relations existing between the two sections of the country, and Northern capital invested in business enterprises in the South must depreciate unless confidence in the ultimate healthful conditions in that section can be restored. An eminent sanitarian in New Orleans when lately discussing with Northern friends the condition existing in that city, as well as the reasons why her commerce does not sweep the whole circle of the world at all times—and why with her age compared with the age and growth of other American cities, she has not a million of inhabitants,—promptly answered that the cause was to be found in the epidemic of yellow fever. Said he: "As compared with Northern cities, the visitations of cholera and small-pox have not affected us to retard our growth any more than you have felt them. The difference is due to one thing alone, to something superadded to the general sum of human miseries—which you have not. The whole life of our city has been corrupted by the venom of the yellow-plague, oozing as an exhalation from the hovering pinions of the Angel of Death—the malignance of hell on earth potential. To pluck the hateful wings of the plague-distilling quills now far above the reach of mortal hands, is a problem yet to be solved by science."

NON-IRRITANT IODINE.

Syr. Acid Hydriodic (Hostelley's).

DOCTOR :—

In Hostelley's Syrup Hydriodic you have the most efficient and at the same time most pleasant means for the internal administration of **iodine.**

It possesses the very desirable quality of being **non-irritating** and presenting that valuable alterative **iodine** in its most assimilable and active form.

Have your druggist order a small quantity from any of the following wholesale houses and try it the next time you have occasion to prescribe **iodine.**

We warrant you will be pleased with the results.

Syr. Acid Hydriodic. (Hostelley's)

Hay-fever.

Its Administration can be continued for any length of time without fear of producing the evil of iodide of potash, as nausea, loss of appetite, etc.

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Non-irritant Iodine.

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Applicable to all Cases in which Iodine is indicated, furnishing the most natural and readily assimilable form for administering that drug.

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As prepared by Us the product is perfectly stable and always in condition for immediate use, which fact cannot fail to be appreciated (The preparation bearing our name is the most stable on the market.)

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Wholesale Houses having our Goods in Stock :

Ohio	Orr, Brown & Price, Columbus, J. D. Park Sons, Cincinnati.	Ind.	A. Kiefer & Co., Indianapolis.
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Notice to Subscribers!

THERE seem to be a number of our subscribers who imagine that $2.00 is such a paltry sum that it is not required by the JOURNAL. This would be the case if there were only a few such, but, when a number owe this small sum, the aggregate amounts to considerable. There are still quite a number of our subscribers who received bills, some of them last January, and more in July, who have not yet remitted. Will not all such kindly remit, without delay to

JOSEPH F. EDWARDS,
224 S. SIXTEENTH STREET,
PHILADELPHIA, PA.

Personal attention to Sanitary Work.

JOHN WORTHINGTON,
Plumber and Gas Fitter,
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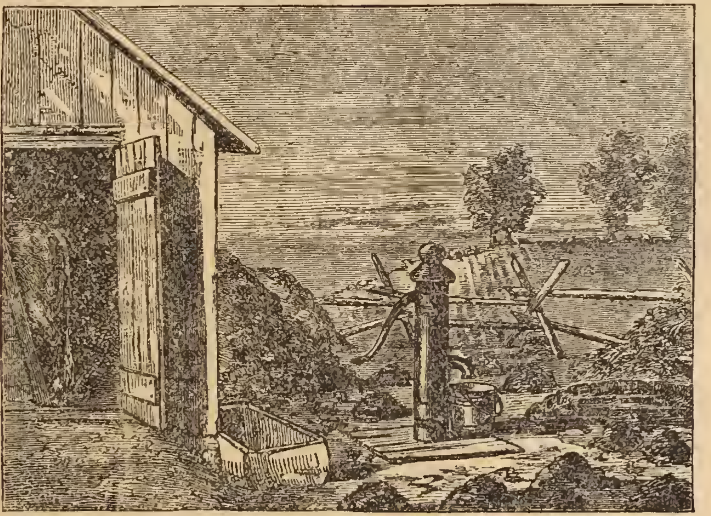
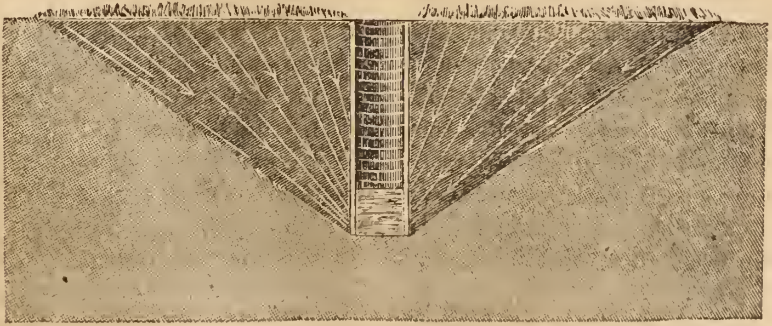
Plans prepared for Drainage and Ventilation of Drain and Soil Pipes.

Drainage. Ventilation.

WM. J. DOUGHERTY,
SANITARY PLUMBING,
225 South Ninth Street,
Shop, 226 South Second St., Philadelphia.

How Milk is Poisoned.—The illustration below of a milk-farm near New York city (originally published in the *Sanitary Engineer*) makes clear how milk is made sometimes very unwholesome and the means of conveying disease. Here we see the cow-shed in very close proximity to the pump from which the water is taken to wash the milk cans and also *to dilute the milk.* The drainage from this cow-shed must find its way into the water of the well, as this cone of filtration will make clear, if we suppose the cow-shed or barn to be located within this cone, as it was in this particular case, and as it is in very many instances. Thus, then, when we drink milk from such a dairy, we are also drinking a certain quantity of cow sewage, so to speak, and, when we examine some of the sediment of this sewage, we are likely to find what the next illustration reveals; certainly not a very inviting looking





lot of material to drink. But it is a very common thing for the well of a dairy farm to be located as we have indicated, or at least, somewhere within the barn-yard. This is all wrong : the water well should be located far away from any possibility of contamination.

The Kiss of Death.—Thoughtlessness and the gratification of sentiment are responsible to a deplorable extent for the extension of infectious disease during epidemics, says the *Sanitary Inspector*. Some instructive experiences on this point are recorded by Dr. Bruce Low in his recent official report on the prevalence of diphtheria in Enfield. Not a few instances came to light in which parents, accompanied often by children, had visited at houses where diphtheria existed for the purpose of condolence, of gossip, or of idle curiosity. And very commonly children, regarded by their parents as practically well after diphtheria, were sent to school without trouble on the part of anyone to obtain certification as to their freedom from infection. So, too, as regards what appear to have been mild cases of diphtheria, people have been content to take advice from "chemists," who in turn have given medicine for "colds," "teething," and the like, with the result that in several instances children having decided diphtheria have mingled freely with their fellows. Again there is a custom among the working class in Enfield, as indeed elsewhere, of assembling children of the family in the sick-room to take their last leave of a relative, dead or dying from infectious disease ; and children have even been brought from other districts to take part in such formal leave-taking. In one case, a child having been attacked by diphtheria, the rest of the children were sent off to the house of a relative to be out of danger's way. But the case being likely to prove fatal, the children were roused from their sleep at midnight to return to the infected house to bid the little sufferer a last farewell. One little child was brought in a blanket to save time. As the patient was dead on their arrival they were each lifted up to kiss the lips of their dead brother. Whether from kissing the corpse or from returning to the infected atmosphere of the sick-room, the other children contracted the disease, as might have been expected. In another instance a mother kept her little girl, an only child, from school to prevent her catching diphtheria, but she permitted her to go to the house of two companions who were known to have had throat illness, to play with them during their convalescence. She took diphtheria and died. In several cases mothers persisted, in spite of the warnings and entreaties of their medical advisers, in kissing their children's lips, and in this way appeared to have contracted diphtheria. Dr. E. F. Fussell, the health officer of East Sussex, refers to the same subject in a recent report. "About ten years ago," he says, "an adult person died of diphtheria at Catsfield. The corpse was taken a few miles distant to a cottage at Seddlescomb. The coffin was opened (as reported to me) outside of the cottage, and the body exposed to the view of the relatives. In a few days there was a severe outbreak of the same disorder among the inmates of the dwelling at Seddlescomb. There had been previously no case of diphtheria in that village." About six years ago a child died from "diphtheritic croup," as reported, at Warbleton. Some of the children from the National school visited the corpse. Several cases of diphtheria, some fatal, occurred among these children soon after visiting the body of their late schoolmate. The latter incident, from various circumstances, was not to me so convincing as the former, in relation to the risk of infection, which may occur to some of those who unnecessarily expose themselves to such possible dangers.

THE SIGHTSEERS' HEADACHE.—Of the lighter penalties which pleasure entails, none probably is more widely known and felt or more persistently endured than the sightseer's headache. It is nature's tax levied on the comfort of that great body of idlers to which we all at some time or other belong. —*The Lancet.* It is epidemic among the frequenters of museums, picture galleries and exhibitions, varying somewhat perhaps in different cases in its precise causation, but associated always in a manner significant of its origin with the habits of the observant loiterer. The circumstances in which it arises afford the most reliable clue to its true character. Among these, temperature, atmosphere, and strain both of body and mind, though commonly combined, play their several parts in varying degrees of activity. The influence of a warm and close atmosphere as a cause of headache is too well known to require more than a passing notice. The torpid congestion of tissue which it tends to induce, and from which the brain is not exempted, is familiar to most of us as a morbid process too often illustrated in our painful experience. It contributes its proportion, doubtless, toward that total of malaise which affects the visitor to a crowded picture-gallery or assembly room, and culminates in the localized ache which renders the slightest mental effort a weariness. The very general prevalence of this variety of headache, however, and its independence in many instances of any vitiation of atmosphere, teach us to look for its explanation in other causes. The effort of mind implied in long-continued observation, even though this does not involve the strain of study, has probably an appreciable, though a secondary, influence. Fatigue certainly has an important share in its production ; but it is with most persons rather fatigue of muscle than of brain. The maintenance of the upright posture during several hours of languid locomotion, the varied and frequent movements of the head commonly in an upward direction, and the similar and equal restlessness of eyes whose focus of vision shifts at every turn as a new object presents itself, form a combined series of forces more powerful in this respect than the sunlight and frequent changes of mental interest and attention by which they are accompanied. The muscular strain implied in these movements is necessarily very considerable. It affects more or less every member of the body, but the distant localization of the resulting ache has probably much to do with unusual activity of the muscles which move the eyeball. Whatever the minor influences at work, therefore, there can be little doubt that mere fatigue is primarily accountable for this most general form of headache, and that rest and nourishment are most reliable antidotes. The utility of stimulants for this purpose is necessarily temporary and deceptive. One improvement on existing arrangements ought to be of real assistance to the suffering sightseer if more generally introduced by responsible authorities. The comparative scarcity of seats in many places of amusement has often been noticed. It would be much to the public advantage if this want were supplied. For the attendants at exhibition stalls a chair for occasional use is an absolute necessity.

THE SANITARY CONDITION OF MELBOURNE.—In the course of a letter from Melbourne, Australia, to the *Med. and Surg. Reporter*, Dr. C. C. Vanderbeck, among other things, says:

> "Melbourne on its surface is fair as a rose; it blooms with delight. But the comparison stops here; for its odor is worse than all the stinks of Cologne. The stench is that of a rotten, polluted, undrained city—a city teeming with four hundred thousand people, and not a drain, save one in Collins street and one in Bourke street. These have been recently laid, and are only for surface water. So-called earth closets are used; but as nine-tenths of them have no earth supplied to them, the sewage system is practically a mere pan receptacle, and is emptied only once a week. It requires a cigar, perfumery, and curses upon such a system to make one's morning visitation to the closet endurable. The people are being taught the danger of this system by the efforts of the Melbourne Health Society; by the visitations of epidemics of typhoid fever; by the fearful death-rate among children, high consumption mortality, and by the general high death-rate. * * * * * I have spoken of the filth question of this city. I find there is a great hue and cry just now of dirt in another direction—the frightful condition of the abattoirs. The accounts published of these are sickening reading. The authorities are at last rousing themselves; a Royal Sanitary Commission has been appointed to enquire into the sanitary condition of the city and its many suburbs; it held its first meeting a few days ago. During the progress of the meeting a Mr. Service, who has been much abroad and looked into these matters, was called upon to "give in his experience." According to this man, the best abattoirs are found in Germany, the worst in Chicago. He said that in Berlin and Munich the abattoirs are kept so clean and tidy that any person could sleep on the premises without experiencing any discomfort. The yards are all carefully paved in order to prevent the retention of any offensive matter, and the method of drainage is perfection. In Berlin they go so far as to practice the æsthetic by the growth of flowering creepers against the wall. He caused much laughter over his description of the Chicago "pork mill." He said that while in the United States, he accompanied a party of men and women on a visit to large abattoirs and a manufacturing establishment in Chicago. It was utterly impossible to approach the yards on foot, the approaches being of the most filthy character, and the yards were in the most unsatisfactory condition; it was one of those institutions in which a pig went in alive at one end and came out tinned pork at the other. Such was the condition of things about the establishment that the women in the party said they would not eat tinned meat again. The question was asked him how they treated the blood at the German abattoirs. This he did not remember, though he saw its importance, as the German sausage is essentially a blood sausage; but he said that after what he had seen at Munich and Berlin he was not afraid to eat anything German. The commission is now taking into consideration the advisability of sending an expert to Germany to critically examine the system in that country."

DISEASE CONTRACTED BY KISSING.—Miss Mary Hooper, an experienced professional nurse of Toledo, Ohio, thus writes to us:—"I see that Dr. R. W. Corwin, of Pueblo, Col., asks in the

October number of the ANNALS OF HYGIENE, to be informed of any case of disease being "contracted or transmitted by kissing." I can speak of two positively, which came under my notice, one in England and one in Tasmania. The one in England was in this wise: In our old home in Dorking, Surrey, there was an old lady staying with us; my aunt, who was her companion and god-child, was very fond of her. Mrs. Arewater (the old lady), was taken with inflammation of the lungs and bronchitis, which proved fatal; one day before her death, my aunt stooped over her and kissed her on the lips; I remember my mother saying at the time, C., you should not do that, and aunt laughed. Mrs. A. died the next day. Aunt was taken with severe bronchitis two days after. She felt the attack coming on the day after, and although she had never suffered from bronchitis before, from that time to her death, eight years afterwards, she had frequent attacks of it.

The second was in the Hobart Hospital, when I was superintendent. There was a young man brought in with diphtheria; his mother, who lived two hundred and fifty miles away, was telegraphed for. I had told the nurses not to let the mother in until I saw her, but they disobeyed orders, and I did not know she was there for nearly half an hour. I went to her at once, and found she had thrown herself down by the bed to kiss the boy—in fact, was still kissing him. I told her the danger, and insisted that she was running unnecessary risk. The boy recovered; three or five days after the mother was brought in with diphtheria and died. I don't know whether these two cases are worth having or not, but I know they are true.

STILL MORE LIQUOR RECIPES.—Of interest, in connection with our liquor report in last month's issue, will be found the following recipes published in the New York *Herald* Oct. 11th:

"For making the 'very best brandy:'—Twelve parts of pure brandy (113 proof), 3 of water, 7 of spirits, a quarter gallon of prune juice and bead oil.

To make a second quality of eau de vie:—Six parts of pure (113 proof), 14 of spirits, 1½ water, a half gallon of prune juice and bead oil.

For real old applejack:—One gallon pure apple brandy, 3½ gallons spirits, one-half water.

For common Bourbon whiskey:—Seven gallons of sour mash, 7 gallons of water, a half gallon prune juice, balance of spirits and bead oil.

Cognac:—Five gallons of California brandy, 10 gallons of raisin brandy, 3 gallons of water, a half gallon of prune juice and bead oil.

For port wine:—Twenty gallons of high spirit, 16 gallons of syrup, 1 ounce of sour beer, 1 ounce of mucate, 1 ounce of nelken.

For kummel:—One barrel, 48 gallons, kummel; 18 gallons of water, 4 gallons of syrup, 26 gallons of spirits, 2 ounces of kummel oil.

A barrel of Arion Club rye:—10 gallons of pure Gubbenheimer, 5 gallons of Golden Wedding, 2 gallons of Blue Grass, 1 gallon flavor, 2 gallons of home-made prune juice, and balance of spirits.

For 5 gallons of peppermint:—3 gallons of spirits, one and three-quarters of water, a quarter syrup flavor and a little coloring.

For Irish whiskey:—5 gallons, take a half gallon of Scotch whiskey, one and a half gallons of Clenara rye, 3 gallons of spirits.

Imported Gin:—10 gallons pure, 3 gallons rye malt gin, and rest spirits."

Surely such publications ought to promote the cause of temperance.

PRECAUTIONS AGAINST INFECTION.—Dr. F. B. Stephenson, of the United States Navy, thus writes in the *Medical Record*, October 27th: The mortality among physicians attending the sufferers from yellow fever in Florida causes me to think that the following suggestions may be of use :

1. Avoid all unnecessary exposure.

2. Stand rather than sit beside the patient's bed, and remain as much as possible near the bottom rather than the head of the bed.

3. Keep a little off for a few seconds when the bedclothes are turned down.

4. If near-sighted, draw the breath and hold it hard before looking at the tongue, or narrowly at any other part of the patient.

5. Never stethoscopize unless it be absolutely necessary ; when necessary, expose the patient's chest for a few seconds before beginning, hold the breath on a full inspiration while making the examination, and be quick about it.

6. After finishing with one patient, go into the middle of the ward for a few seconds to draw your breath a bit before beginning with another.

7. Never enter a fever ward in the morning without breakfasting, or, if at a too early hour for that, without taking coffee.

8. Have a ward coat, to be cast off and ventilated after getting into quarters.

9. Enforce regular ventilation.

The chief merits of these rules are that they are obvious in their object, easily acquired so as to become a habit, and such as may be practised without exciting any attention from by-standers.

These precepts, though formulated for hospital service by a scientific practitioner of a past generation, appear adaptable to the daily life of medical men in private practice.

VALUE OF SANITATION.—Dr. John C. M'Vail says : "If the question be asked: Where is the proof that our preventive measures—our sanitation, vaccination and isolation—have had the results we speak of? the answer is at hand. It is given by the Registrar-General in the language of figures. He points out that, according to the newest English life-table, the children born in England in any one year have now divided among them 'nearly two million years of life'—more than would have been the case thirty-five years ago. In England and Wales the annual mortality per million of population per annum has been as follows :

1861–65	1866–70	1871–75
22,595	22,436	21,975

1876–80	1881–85
20,817	10,310

Comparing the first period and the last, the difference is 3285 per million, and taking the population at 30,000,000, the total annual saving is about 100,000 lives. And if for every death there are twenty cases of sickness, then we have two million less cases of sickness in the first period. * * * You can count the cost of each case of sickness, of lost work, of doctors' bills and so on, and also the monetary value of each of the 100,000 lives saved. And you can put all this as an income against the interest on the money spent in sanitary improvements, in water works, sewage works, vaccination grants, officials' salaries, etc., and even on this lowest ground—on this merely commercial basis—we find that cleanliness is next to godliness, resembles godliness itself in being 'great gain.'"—*Sanitary Journal*, July 4, 1888.

POPULAR EDUCATION IN HYGIENE.—Dr. T. Clark Miller, the President of the Ohio State Board of Health, very truly says:

> "Many of the people, as well as most of the officials, can see the convenience of having election statistics, and derive some satisfaction from a comparison of the hog census of one year with that of another; and yet those who attach importance to the birth and death rate, that is, the *human* birth and death rate, are greatly in the minority, and this great State is more profoundly moved by a local outbreak of hog-cholera than by the prevalence of half a dozen preventable diseases among the citizens and their children; hence a somewhat tedious educational process must be gone through before the average citizen is brought to realize the importance of sanitary measures. Adequate laws must necessarily be inoperative or burdensome to those who have no conception of their necessity; so it seems to me that the important question. for the State Board of Health for the present is, how best to contribute to the development of interest and the growth of knowledge in sanitary science."

Commenting on these words of eminent wisdom, the *Sanitary Era* says:

> "Considering that all sanitarians and health officers are alike feelingly impressed in their daily experience with this necessity for popular sanitary education, the wonder is that so few of them take any trouble to encourage the circulation of progressive sanitary journals and to excite popular interest in the comparative returns of monthly mortality in their own and other localities. Nay, the wonder is that every man of them does not constitute himself, or some one who can afford to work for the commissions, a local subscription agent for such publications."

THE TREATMENT OF ROUND SHOULDERS.—Dr. Stillman, in *Archives of Pediatrics*, says: "Physical treatment involves the employment of such exercises and movements as will conduce to the proper strengthening of the deficient muscles, and also tend to diminish the deformity itself. The first exercise to which your attention is called necessitates the use of a table. For this purpose employ either a table, or lounge, or couch, the surface of which is padded or covered so as to be comfortable to the patient, and it should be low so as to divest the patient of all fear of falling while undergoing the exercise. The patient should place himself or herself in the extension position, *i. e.*, the edge of the table should come across the loins, the patient lying upon his back, and the head and upper extremities should hang over into space. When this position is assumed, it will be seen that the chest has a tendency to resume its normal shape, that it loses its contracted appearance and that the shoulder-blades tend to approach each other. To approximate the shoulder-blades still further the patient may clasp the hands together behind the back, and while undergoing this process it will appear that the skin and tissues of the anterior portion of the chest are stretched as much as their structure allows, and that posteriorly the soft parts become relaxed. Dumb-bells of various sizes are now taken in the hands, and a series of rapid lateral movements practiced, which still further expand the chest. There are quite a number of calisthenic exercises which are of advantage if practiced in this horizontal backward traction position, but they must be employed with care and moderation, as their expanding effects are so powerfully augmented by gravity that they may strain the tissues painfully and thus delay treatment."

THE UNIVERSITY MEDICAL MAGAZINE.—The first issue of this new journal has reached us, and after critically examining both its literary and mechanical make-up, we have reached the conclusion that it has not only come to stay, but that it has been born to a life of unusual vigor and usefulness. Such writers as Agnew, Goodell, Pepper, Osler, Tyson, White, and the host of others who have and who will contribute to its pages, are always eagerly read, and a journal that will always present their best efforts, as it is the aim of the *University Medical Magazine* to do, ought to be and will be anxiously waited for from month to month by all the more intelligent members of our profession. This journal, published under the auspices of the Faculty of The Medical Department of The University of Pennsylvania, is fortunate, not only in its active editorial department, with two such intelligent and energetic editors as Drs. de Schweinitz and Hare, but it starts under unusually favorable auspices, so far as its publishing arrangements are concerned. To all who know him, Dr. Hummel is the "right man in the right place," and we can truthfully say that the "Old University" has displayed its usual wisdom in the selection of a publisher for its official publication.

PULLMAN; A CITY OF HEALTH.—Some years since that charming English writer, Dr. Benjamin Ward Richardson, prepared a little essay, entitled "Hygeia; a City of Health," in which he outlined what he felt compelled to regard as an Utopian creation, a city wherein all sanitary requirements were so heeded that the lowest possible death-rate was achieved. Utopian though he considered such an idea, if we can credit the New York *Medical Times*, it has come to pass in this day and generation, for that journal tells us the town of Pullman is an illustration of what scientific sanitation and intelligence and honesty in directing the affairs of a city will accomplish. Located but a short distance from Chicago, with a population of 12,000, the drainage and cleanliness of the town are so complete, the facilities for healthy amusement and instruction so abundant, with an entire absence of liquor establishments, that in 1887 the death-rate was only nine per one thousand, the previous year only eight, and this year it will be still less, against twenty-six per one thousand in the city of New York. The secret of this wonderful showing is that Pullman is under the control of a one-man power, the Pullmans, who are autocratic in the management of the affairs of the city.

HAS HUMANITY ADVANCED?—In the course of a posthumous paper, published in the *Philadelphia Press* (October 28th), Professor R. A. Proctor questions whether, in spite of the vaunted progress of the nineteenth century, we of to-day are as truly civilized and cultured as were the nations of antiquity. As we perused this article we were forced to conclude that Professor Proctor was right, for, as we read, we glanced out of a window that looks toward a barn-yard wherein a lot of manure had accumulated. It was raining, and the water, saturated with organic refuse, stood in pools in this barn-yard. What, thought we, would be said of the civilization and culture of a man who would drink that liquid as compared with that of the Ancient Roman, who brought his water, pure and wholesome, from the far mountain through marvellously constructed aqueducts. Then, as our thoughts wandered to the resident of Philadelphia, who is sadly content to drink water that is even worse than that in our barn-yard (for there is no typhoid fever there), we were forced to conclude that we of to-day must yield the palm for true civilization to our antiquated but supremely wise brethren.

A SIMPLE FILTER.—Dr. F. A. Castle, of New York, thus describes in a letter to the New York *Medical Journal*, a simple, and, as he claims, efficient filter: "For a long time I have used in my butler's pantry a simple contrivance for filtering water used on the table, which has been so serviceable, and at the same time so inexpensive, that I venture to recommend it. I took an ordinary glass pharmaceutical percolator and packed the outlet with absorbent cotton so tightly that the water could only flow in drops. By means of a piece of copper wire for a bale it was suspended from a hook on the lower side of one of the pantry shelves, over the shelf of the sink. As often as necessary, water is poured into the percolator, and the water pitcher is placed under the outlet. Whenever the cotton shows much discoloration—a thing which is easily observed, owing to the percolator being of glass—the maid replaces it with fresh absorbent cotton. It is in all respects the most practical and cheapest filter I know of, and has no machinery to get out of order, no patent right to carry, and the advantage over most filters that the filtering medium is always under observation, so that there is little risk of contamination of the water by accumulation of filth."

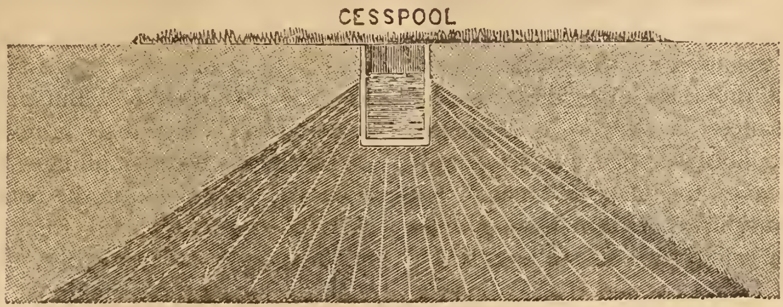
A GREATER SCOURGE THAN CHOLERA.—We shudder at the ravages of cholera, says Prof. Vaughan but let us come nearer home. Typhoid fever slays its hundreds where cholera slays its tens. Every death from typhoid fever is unnecessary. If the soil were not contaminated, none would occur. Yet there are 1,000 deaths from this disease in Michigan each year; and, for every one who dies ten persons are sick, and not a case is justifiable. Typhoid fever comes to those in the prime of life. Each patient is sick on the average about four weeks, and there are ten thousand sick during the year. This means not only a great loss of wages but a nurse is required for each person sick, so that twenty thousand people give up their entire time to this disease four weeks out of each year. You may keep your premises clean, but only a little fence separates you from your neighbor, and he may be careless. If that neighbor should knock you on the head in a dark night, he would be sent to prison; but he may contaminate your well, and rob you of your life and your family, and you do nothing. The time will come when it will be a criminal offense for any man, through carelessness, to give his neighbor a communicable disease.

FASHION IN DEFORMITY.—The great physician Virchow's lecture on Artificial Deformities of the Body, was listened to with unusual interest (says the *Med. and Surg. Reporter*). He thundered against the baneful influences exerted on the human body by various modern fashions. What is the use, Virchow asked, of introducing the principles and appliances of hygiene into the huts of the poor and ignorant, when the scions of wealth, pretended intelligence, and fashion, especially in the gentler sex, show their contempt of hygiene by their dress and general wearing apparel? In days gone by, the speaker said, I have battled against the diabolical invention called the corset; but this crusade has been given up by me as absolutely futile. The French shoe, with pointed toe and the heel under the middle of the foot, is another fashion which, on account of its detrimental influences on the body, cannot be opposed too energetically. Even the modern stocking, pointed and symmetrical, is injurious to health, as it does not conform to the anatomical formation of the foot. Virchow believes that the modern shoe and stocking, by weakening the toes, invite gouty deposits.

HEREDITY AND LONGEVITY.—We have always believed that too much importance has been attached to heredity as a factor in longevity; of course, it is an important consideration, but not so much so as many would have us believe. If, for example, A comes of a long-lived family, and B of one where early death has been the rule, and if they both live exactly the same kind of lives, the chances are that the former will outlive the latter. But, if A presumes on his family history of longevity to lead a careless life, from a sanitary point of view, while B is properly watchful of his health, then we would rather insure B than A, in spite of his family history of early death. This has been our belief, that is to say, that the significance of heredity in the promotion of longevity is dependent upon the care with which the individual fosters his inherited tendency to longevity, and is not, intrinsically, an assurance of long life; while the history of early death, on the other hand, is not, in itself, an assurance of short life; the significance of either inheritance depending greatly upon the individual. Our views on this subject have received a remarkably strong endorsement by some facts published in the *Popular Science Monthly* by Clement Milton Hammond, who there gives a summary of the replies received from 3,500 octogenarians in New England, to whom he sent a catechising circular in reference to the causes of their longevity. From this article we learn that not *over one-third of the children of these aged people have reached middle life*, *and about one-half died either in infancy or before thirty*, *and about one-fourth only are still living*. These facts strongly point out of how little value heredity is, of itself alone, in the promotion of longevity.

TAKE CARE OF YOUR EARS.—Everyone, says *Medical Classics*, has felt an intolerable itching in the ear; indeed, the inclination to relieve this itching is often absolutely imperative and admits of no delay. If you use your little finger, have the grace to clean it very thoroughly, and the nail, too; apropos of the nail, we offer the sound advice to have it pared down near to the flesh in the crescentic shape intended for it by nature. Do not titillate your ear with a little finger armed with the lance-shaped nail affected by most ladies of the period. You will most probably wound the skin of the canal and you may have in consequence a severe inflammation following the titillation, for the skin of the canal, at least in the vicinity of the drum, is very thin and lies directly upon the periosteum—the covering of the bone. We have frequently seen people wash their ears as if they had given them some offense; the washing amounts to a chastisement; they bore and pull and rub the organ in the most irrational way. A soft rag or cotton would be better than the fingers, and we would suggest gentler treatment of a vulnerable, useful and ornamental organ.

WATER POLLUTION.—We hear a great deal about the pollution of water wells from cess-pools in country districts and we have thought that this illustration (after Professor Kedzie) might serve to make the point more clear. We can, of course, readily understand how, if a water well be dug any place within this cone, the drainage from the cess-pool would surely find its way into it. The rule should be never to have your cess-pool on the same level with the water well, always below it; but if this be impossible then it should be at least one hundred feet distant from it, and certainly not on higher ground.



Cone of pollution.

GARBAGE CREMATION AT CONEY ISLAND.—A furnace for the destruction of garbage has been erected on Coney Island that seems to have solved the problem of disposing of city garbage in a cheap and effective manner. The furnace was constructed at the instigation of the Board of Health of Coney Island with the stipulation that it was to prove satisfactory or not be accepted. It is built of brick, twenty feet long, eight feet high and five feet wide, with a fire-box at each end. Two feet from the bottom there is an iron subdivision on which the garbage rests. The draughts are so arranged that the fire from one end passes over and heats the garbage, generating a gas, which, when carried to the other end, is ignited by the other fire, thus causing complete combustion. The experimental test was made in the presence of the Boards of Health of Hartford, Newport, Brooklyn, West Point, Ocean Grove and Coney Island. Some small dead animals and a dead horse were inside the furnace when the fires were started. A dozen barrels of garbage were then turned in and the doors closed. After being allowed to burn a few minutes the doors were again opened and garbage sufficient to increase the entire mass to four and one-half tons was added to the burning mass. When the doors were finally opened all that remained of the great heaps of garbage was a half barrel of white ashes, which were odorless.

REGIMEN OF THE JAPANESE SOLDIER.—On his entrance into the army the soldier receives a manual of hygiene, in which Ogata has given, in a familiar form, very important counsel.

The alimentation of the Japanese soldier is composed of a daily ration of 1,091 grammes of uncooked rice and a money allowance—with which to purchase food—of six cents a day for privates and eight cents a day for officers. With this sum they buy fresh or salted fish; tofou, a pulp of fermented beans, very rich in albumen; daikó or turnip cabbage, onions, radishes, gherkins, batatas, and aquatic plants. They also buy shrimp or lobsters, seeds and stems of nenuphar (*nymphea nelumbo*), preserved ginger, fried or boiled Indian meal, dried mushrooms, preserved red beans, salted plums, fermented cucumbers, etc. To these a small amount of pastry is added, together with allspice, pepper, saffron and fermented sauces, which are used to mask the insipid taste of the rice. The most used of these sauces is shoyou, a fermented product of beans. Rice, which is simply boiled, takes the place of bread. Tea is the only drink, except among those who can afford saki or rice brandy.

THE HYGIENE OF BRIGHT'S DISEASE.—Dr. Stephen Smith Burt, of New York, a gentleman of rare perception, in the course of some remarks on the management of Bright's disease, after plainly indicating how little confidence he places in *drugs* for the relief of this disease, says: "It is my conviction that the great aim is discovery of what produces disease. Human beings are the victims of ignorant, if not wilful, transgression of nature's laws, and the best we can do is to aid her efforts to compensate for these mistakes. Experience teaches that we may palliate many of the distressing symptoms of disease; that meantime there is a strong tendency towards recovery, but that in some instances, under the most skillful management, death gains the victory. Were it not for ignorance, or for stupid disregard of what is known, life might reach its natural span. This certainly will not be brought about by vain gropings after specific remedies. Under the existing state of affairs we have to do the best we can with Bright's disease as with other maladies."

THE WORK OF DISEASE.—When we look only at the living, says the *Sanitary Era*, we are impressed with a seeming predominance of life. The death germs that swarm forth to infinity in our breath and food and drink from the universal excretions and carrion of the organic universe, then seem but a "fairy tale of science," and the visible lusty billions of mankind turn the tale into ridicule. But trace this brave procession of lusty billions a little further on, where it plunges like ten thousand Niagaras into the bottomless sink of death, we find that a great majority have fallen victims, after all, to the contemptible microbe; hardly one in a hundred spared to die a natural death. By studying the tables and classifications of mortality, we learn that death in the cup and the platter is no remote chance; the remote chance is really that of escaping to fill out our days to a natural decline and that gentle lapse into the ocean of eternity which is the normal termination of human life on earth.

DRINK PLENTY OF WATER.—Dr. W. M. Yandell, of El Paso, Texas, thus writes to us: "I notice an article in a recent number of THE ANNALS in reference to the old theory of the dilution of the gastric juice by drinking water freely with meals, etc. My father (the late L. P. Yandell, Sr., of

Louisville,) told me before the late war that he had been in his younger days a firm believer in the theory. He was a confirmed dyspeptic, and drank no water at any meal and very little fluid of any kind, but he said that experience and observation had convinced him that most fat men and others with fine digestion consumed large quantities of water with their meals. This has been my experience. Personally I have never had dinner to disagree with me (though at times suffering with indigestion after breakfast or supper) and I invariably drink from three to five glasses of water with that meal, or from something over a pint to over a quart.''

A PARRICIDE'S ANCESTRY.—We know not the ancestral history of the wretched young man who lies in a Jersey jail condemned to death for the murder of his own father, but when we look at the head and face of this parricide we must perforce believe that its configuration has been inherited, and we are constrained to ask what better than the instincts of the brute creation could be expected from such a physiognomy. It would require, we assume, a series of lives of brutality to result in the production of the type of humanity here depicted. Let us all lead such pure, natural, healthy lives that human beings such as this will be impossibilities. Thank God, they are rare; let us aim that they shall be no more amongst us.

PAINTED AND POWDERED CHILDREN.—Parisian mothers, according to *The Lancet*, are not content to see their children healthy looking, but have called in the aid of dyes and powders to impart what they consider to be a still more becoming complexion. *The Medical Record*, which quotes the above, need not have gone so far from home for the item, says *The Sanitary Era*. We hear of women in New York and other American cities who paint and powder their children, aye, and curl and corset them, girls and boys alike, as assiduously as they disfigure themselves. A lady mentions to us a woman of her acquaintance who had a little boy and girl, both of whom had to wear corsets constantly, waking and sleeping, and both of whom were taken out on promenade in wigs and complexion make-ups varied in tint from day to day to match their various suits of clothes. Sometimes the wigs were black and the complexions brunette, to harmonize effectively with certain colors in dress; sometimes blonde; at other times of intermediate shades, to suit a whole gamut of tones in their apparel. It is said that one of the latest barbarisms of ostentatious women is to have a central front tooth replaced with a false one in which a diamond is set.

ANONYMOUS COMMUNICATIONS.—Last month we received an anonymous communication directing our attention to some defective plumbing work that was going on in this city. We forwarded the communication to Health Officer Patterson, who replied as follows:

> "I regret that you have not the name of the person sending the complaint in reference to the drainage being laid at Twenty-

ninth and Susquehanna avenue, that I may extend to him the compliments of the undersigned. The work being done is of the vilest and most dangerous kind that could have been conceived by any person, and in a short time would have caused the worst nuisance that you can think of. I am speaking now in case of any oversight or neglect of our Drainage Inspector not discovering the work before it was covered over, although the law requires the builder not to cover any drain-pipe until after it has been inspected by this department. The drain, as now laid, has been ordered to be removed, and the work to be done in a sanitary manner."

While, therefore, we thank our correspondent and request such communications, we must ask that hereafter the writer gives his name. As a rule, we will pay no heed to anonymous communications. We will not necessarily make the writer's name public, but we must have it or the communication goes to the waste-paper basket.

A CORRECTION.—The *Medical Record* October 13, 1888, says: "The Boston *Medical and Surgical Journal*, from which an extract was quoted by the *Medical Record* bearing on the composition of several artificial foods, publishes a correction based upon the analyses of Professors Elwyn Waller and A. A. Breneman regarding Reed & Carnrick's soluble food, to the effect that 38.26 per cent. of the albuminoids which it contains are in soluble form, that no 'hard unchanged particles of casein' were found, that the casein is partially rendered soluble by the action of the digestive ferment. That the proportion of albuminoids in Liquid Peptonoids is limited only by the quantity which can be kept unchanged in solution, that sixteen per cent. of alcohol is necessary to prevent decomposition of the albuminoids, and that no greater than three per cent. of these can be held in solution in this liquid. We publish the correction from the same source as the original quotation as an act of justice to all concerned, regretting that we, in common with our Boston contemporary, were in any manner misled by what appeared to be a well-authenticated official report."

THE MANAGEMENT OF SMALL-POX IN NEW YORK.—In referring to the remarkably small number of cases of small-pox occurring in New York of late, although the disease has been more or less prevalent in some of the neighboring cities and towns, Mr. Bayles, President of the Board of Health, recently made the following statement:

"I believe the reason for the singular exemption of New York to be almost wholly due to the system of isolation now in use, which is wonderfully expeditious. The moment a case is reported by the physician in attendance the inspector in whose district the case occurs is at once sent to look it up, and if he has any doubts about the character of the disease, he sends immediately to the central office, when one of the experts is dispatched to his assistance. All the district inspectors are in telephone communication with the central office, so that no time is lost; and the period that elapses between the report of the case and the removal of the patient to the hospital is frequently not more than four hours. The bedding and other effects are removed to the disinfecting house of the Health Department, and the disinfecting corps thoroughly fumigate the entire premises. Of course, the vaccination of those exposed to the risk of contagion is also carefully looked after."

TERRA-COTTA DRAIN PIPES.—At a recent meeting of plumbers and sewer-pipe manufacturers in this city, a committee was appointed to wait on the Board of Health and endeavor to secure such a modification of the tests now in vogue as would permit the use of terra-cotta pipe underground. We must say a very emphatic word on this subject. Terra-cotta drain pipes ought never to be used for sewage. If we want to saturate the soil with sewage, then let us use them, but if we desire, as we should, to safely carry it all away to the sewer, then terra-cotta cannot be relied upon. We have high authority for believing that securely tight joints cannot be made, and we are positively satisfied that no matter how carefully they may be laid, these pipes will break. Therefore, we unhesitatingly say that he who values his health will have no terra-cotta pipes about his drainage system. Wrought iron will be more expensive in money at the time, but much less so in subsequent sickness.

THE SOWING OF THE SEEDS OF DISEASE.—The great scientist, Professor Tyndall, has very truly said, "Sow small-pox in the human body, your crop is small-pox: sow there scarlet fever, and your crop is scarlet fever; sow typhoid virus, and your crop is typhoid; cholera, your crop is cholera. The disease bears as constant relation to its contagion as a stalk of wheat or a thistle does to its seed. With analogies so obvious and striking, it is no wonder that the conviction is spreading and gaining daily in strength that reproductive parasitic life is at the root of epidemic disease; that living ferments, finding lodgment in the body, increase there and multiply, directly ruining the tissue on which they subsist, or they destroy life indirectly by the generation of poisonous compounds within the body."

HOW TO MAKE YOUR BED.—It would be best if one allowed the bed to remain *unmade* until late in the afternoon, so that the mattresses, as well as the bed-clothing, would be well-aired, but there are few housekeepers who would be willing to do this, because it would make the house untidy. We are glad, therefore, to offer them this compromise, suggested in the letter of one of our correspondents. Air the first sheet for a while, and, having turned the mattresses, spread it over them, then put on bolster and pillows, and a white lace spread of very open pattern (say antique lace), which will present a good appearance, as it can have nothing handsomer than white underneath it; pillow and bolster shams of the same. When the maid removes the spread and shams in the evening, she can put on the second sheets, blankets, etc. This will please the eye during the day, while it will allow of better ventilation of the bed-clothing.

SCHOOL OF HYGIENE AT ROME.—Sanitary science is beginning to be cultivated in earnest in Italy. A School of Hygiene has been established in connection with the Institute of Experimental Hygiene in Rome. Instruction in matters relating to the public health and sanitary engineering will be given to medical men, engineers, veterinary surgeons, and pharmacists; and the technical researches on subjects relating to sanitation, offered by the Italian Board of Public Health, will be carried out. The course will include practical exercises in physical and microscopical investigation, and chemical analysis as applied to hygiene. A certificate will be given after due examination to those who have gone through the whole course. Dr. Pagliani, Ordinary Professor of Hygiene in the University of Turin, has been appointed Director of the School, in which he will also fill the Chair of Sanitary Engineering.

BLAINE'S CARE OF HIS HEALTH.—No matter how one may view him politically there can be no question that Mr. Blaine is an extremely wise man, and in no way does he better show his wisdom than in the care of his health. From General Adam E. King, of Baltimore, who has been Mr. Blaine's constant companion during his recent campaign trip, we learn that he takes excellent care of himself. He is very careful about what he eats. He takes nothing but simple food, but of that he eats with an appetite. A little beefsteak, some fried potatoes, with bread and butter, is quite enough for him. General King has seen his entertainers many a time, under the impression that Mr. Blaine was fond of fine and very rich food, serve a lot of fancy courses, and at the end Mr. Blaine would leave the table hungry, because he really would not eat them, though, to be sure, he would go through the motions.

DON'T USE TERRA-COTTA PIPES.—The brother of the editor of this journal recently bought a handsome country place, and when he commenced to make some necessary alterations about the house, he found water in the cellar. After careful investigation, he found that the pipe intended to carry the surplus water from the spring passed under the cellar floor, *that this pipe was of terra-cotta, and that it was shattered into fragments*, so that the water was, all the time, saturating the cellar floor. It was most convenient to carry this pipe under the cellar, as a great amount of digging was saved thereby. An iron pipe was substituted for the terra-cotta, and all is now well. This instance serves again to point that which we have already said in another part of this issue, that *terra-cotta* pipes should be relegated to obscurity,—they are worse than useless, for, since they *will break*, they are extremely dangerous.

THE SCIENCE OF SANITATION.—Dr. Vivian Poore, of London, argues that the greatest of all sanitary evils is overcrowding, and that the professional sanitarian would scarcely be needed if it were not for the fatal tendency of populations to concentrate in towns. The science of sanitation, he says, is practically the science which enables persons to live in crowds with the least amount of damage to themselves. We must not lose sight of the fact that big schemes of water-supply and sewerage tended indirectly to cause a concentration of population in itself most undesirable. It was doubtful if this over-crowding of buildings could be prevented; but, unless it could, one must have serious doubts as to the permanency in the improvement in health in our large towns. Death-rates were often very misleading, especially in regard to so mobile a population as that of London.

SEA HOSPITALS.—The *London Lancet* has recently made the suggestion that we should fit out ships for the accommodation of consumptive patients, with the object in view of supplying these cases with the purest of sea air. These vessels, it is recommended, will cruise within easy reach of such ports as will afford them fresh vegetables and water; and, according to the season, they will sail either in southern or northern waters. They will have a staff of efficient officers; and every appliance and means of treatment will be provided.

There are very many persons who,

with ample means at their command, are suffering from lung-hunger and lung-thirst that might regain their lost health if they could, in some manner, get access to the limitless supplies of fresh and pure ocean air, for the like of which they pant at home.

HEREDITARY ST. VITUS' DANCE.—According to an English exchange there is a form of St. Vitus' Dance occurring in adults, and even in advanced life, which has not been very clearly delineated. It is peculiar, inasmuch as the only appreciable cause is heredity. In every case one or other of the parents has been afflicted in a like manner, and it differs from the classical forms of the disease in the ability of the patient, by an effort of the will, to procure a temporary cessation of the disordered muscular movements. The malady is insidious in its onset and tedious in its course, and sooner or later the patient manifests symptoms of mental derangement, which causes his career to finish in an asylum. It generally occurs between forty and fifty years of age, and is not amenable to treatment.

COLOR BLINDNESS.—Some time since the Legislature of Alabama passed a law forbidding the employment of persons on railroads within the State who are affected with color blindness and defective vision, and requiring railroad employes to have their sight tested by a board of experts. The constitutionality of this law has been tested by both the Supreme Courts of Alabama and of the United States, and has been upheld, so that the way is now clear for all our States to enact similar laws. They should do so, and without delay, for all must recognize how terrible it is to entrust the lives of the hundreds of thousands who daily travel on our railroads to the dangers that must result from a physical infirmity that incapacitates a man from rightly interpreting the signals by which trains are run.

THE VALUE OF SUN-LIGHT.—Did you ever see a long, attenuated, *white* potato-vine, that had grown in the cellar from some neglected tuber left behind after the spring cleaning? (asks Mrs. Plunkett, in her charming little book, "Women, Doctors and Plumbers.") To be sure, it did its best, and reached forth toward any ray of light that struggled in through any little open chink; but, compare it with the stout, deep green, luxuriant cousin grown in the open field. These present a violent contrast, but it is, in reality, no greater than the effects of sunlight or *no* sun-light on persons as well as things, though it is carried a little further in the case of the helpless sprout than in that of the pale, weakly girl, who grows up on the floor above it.

TO STOP COUGHING.—There is nothing more annoying than to be seized with a fit of uncontrollable coughing or sneezing when in company, or the theatre, or other public place, and any simple device that will check the paroxysm will be eagerly welcomed. We have had no personal experience with the following method, but, since it is recommended by so high an authority as Dr. Brown-Sequard, it is worthy of trial. Coughing and sneezing, he says, can be stopped by pressing on the nerves of the lips in the neighborhood of the nose. Pressing in the neighborhood of the ear, or pressing very hard on the top of the mouth, inside, is also a means of stopping coughing.

SEVERE FROM MILDER FORMS OF THROAT DISEASE.—Dr. Longhead, of Ravenna, Ohio (says the *Sanitary Inspector*), speaking of the possibility of contracting true diphtheria from cases of what appears to be mild sore throat, says: "A case of this kind occurred of which I have personal knowledge. One of Mrs. A.'s children had a slight sore throat, but not sufficient to call a physician. A few days later Mrs. A. visited her sister, four miles away. When she returned home at night she found her two other children sick with diphtheria, and four or five days later one of her sister's children was taken with true diphtheria. In this case there was no other means of exposure, and Mrs. A. undoubtedly carried the contagion in her clothes."

PORCELAIN SHOT FOR CLEANING BOTTLES.—From a foreign exchange we learn that for cleaning obstinately dirty bottles porcelain shot is a novelty recently introduced by a firm in Munich, Germany. It is well known that lead shot, as frequently used, is objectionable, if not dangerous, on the ground that particles of lead detach themselves sometimes from the shot, and adhere to portions of the interior of the bottle, from which they cannot be dislodged by after brushing. If these small scales of lead are subjected to the action of carbonic acid in solution and under pressure, they will be readily dissolved, and another source of lead-poisoning may be discovered. The new porcelain shot must, however, be used without much violence, or the result will be the starring of the bottle.

DISINFECTANTS IN CASES OF INFECTIOUS DISEASES.—The *Archives of Pediatrics* says: "The best way to disinfect a house is by washing the walls and furniture with a one one-thousandth solution of corrosive sublimate, and then with soap and water. Afterward, it should be freely ventilated. The sick-room should be thoroughly ventilated, and the towels, bed-linen, etc., washed in a one two-thousandth solution of corrosive sublimate before they are used again. Wagons of transportation should be disinfected after each time of use. All attendants should wash hands, nails, beard and hair with a five per cent. solution of carbolic acid, or a one two-thousandth solution of corrosive sublimate. Food should not be kept in a sick-room."

THE CHINATOWN ULCER.—Under the above caption the *Pacific Medical and Surgical Journal* gives an editorial on the sanitary condition of the Chinese quarter of San Francisco.

The writer very sensibly remarks that the disgrace does not attach to the Chinese. They know nothing of sanitation and see no advantage in civilized ways. The remedy consists in suitable legislation to provide a proper sanitary condition, and the appointment of inspectors to see that the laws are carried out. Abuse of the Chinese does no good, while raids are simply intermittent efforts, which should give place to a steady, systematic enforcement of the law.

THE OCTOBER NUMBER of *The International Journal of Surgery and Antiseptics* contains an excellent likeness of the late Dr. C. R. Agnew, of N. Y. The subscription of the *Journal* is $1.00 a year; single copy 30 cents. DR. F. KING, *Manager*.

P. O. Box 587, N. Y.

Like an Alarm of Fire.—The head of the Health Department of New York city has some very clear notions in regard to the great need for alertness in the management of infectious diseases, says the *Medical News*. He has had occasion lately to write officially as to the imminence of yellow fever. From his letter we quote a paragraph which shows its author's confidence that this department is thoroughly equipped and disciplined. After remarking that yellow fever is not to be dreaded this year at our northern cities, he says: "If the fever should occur, however, it would be in isolated cases, with which we are prepared to deal so promptly and effectually that it will have no chance to spread. The machinery of the contagious diseases division of this department is in such condition that it can be set in motion at a moment's notice, and I am confident that the response of this department to a notice of known or suspected disease of a dangerous character would be *like that of the fire department to an alarm*. With special reference to yellow fever, we have a medical inspector constantly on duty at our headquarters. Within five minutes after receiving a report he would be on his way to inspect it; within thirty minutes we should have his report, and immediately an ambulance and the disinfector's wagon would be despatched to the place. In an hour we should have the patient on his way to the hospital at North Brother Island." When we reflect how much panic and harm often arise from a lack of preparation for such visitations, it is very gratifying and reassuring to read that a health official compares the readiness and discipline of his department with those of the model fire departments of our large cities, where everything is in motion at the touch of a bell.

Country vs. City Life.—In the course of Mr. Hammond's article in the *Popular Science Monthly*, elsewhere referred to in this issue, we find that out of 1,000 octogenarians, now living in New England, 461 have been farmers all their lives, *while nearly all of them began life upon the farm*. Ten years ago the editor of this journal addressed a circular letter to the authorities of every city and town in the United States, asking for the names of all citizens over eighty years of age; thousands of names were received. To each of these was sent a circular letter propounding certain definite questions bearing on longevity, and also asking for individual views on this subject. The answers to these questions varied very much, with one single exception. One of the questions was, "Were you born and brought up in the city or the country?" Out of the many thousands of answers received, *only one single octogenarian had been born and raised in a city*. Very many of our correspondents had removed to cities and engaged in business of some kind, but they had all (*but one*) been born and spent their early years in the country, thus laying up a good foundation before commencing to battle with the pernicious influences of city life. Mr. Hammond's investigations in New England, corroborating our own more extended efforts throughout the nation, combined with the well known fact that most of our great men of affairs in this country have been farmers' boys, should warn us to give our children the benefits of country life, and should greatly boom the now prevalent healthful tendency to suburban living.

FOOT-BALL.—We are at the height of the foot-ball season, says the *Medical Record*, and the weekly record of casualties in various college towns and athletic associations is considerable. Such casualties are usually those of strains, bruises, wounds, with occasional severer injuries. It would hardly be thought that foot-ball could, like tennis and base-ball, produce a special form of trouble; yet, according to Dr. George Werry, in *The Lancet*, such is the case. The physician in question says that the most common foot-ball accident which he is called upon to treat is one known technically as "the poop." Whether such term has become adopted in this country or not, we cannot say; but certainly the accident occurs here. The description of the injury given by Dr. Werry, is this: During the game a player receives a blow on the front and outside of the thigh; there is at once a feeling of utter helplessness, but he may recover so far as to be able to continue the play after a short rest, and feel little of it next day, except that he cannot run. The patient comes to consult the physician the day after the injury, with little pain. He limps in walking. On examination there may be effusion into the knee-joint, a soft and somewhat tender area over the front of the thigh, and the patient cannot lift the limb when it is kept extended. Recovery is usually complete.

LEAD-POISONING FROM GLAZED EARTHENWARE.—It is far from being generally known that the use of glazed earthenware pans for preparing home-made bread, etc., is attended by the risk of lead-poisoning due to the glaze becoming dissolved and giving rise to more or less serious symptoms. In view of some recent cases of poisoning due to this cause it has been suggested that the fermenting process should be carried out in wooden vessels. Lead-poisoning is a contingency against which the medical man requires to be on his guard. It occurs in the most unexpected places, and under circumstances which are very apt to escape his attention. The sources from which it has been known to be derived are varied in the extreme, and have often baffled the efforts to afford relief until some one, more far-seeing than the others, has set to work to investigate the causes which underlie the perplexing ailments to which the ingestion of lead in any form is apt to give rise. There is scarcely an article of food, and still less of drink, which is not liable to contain this agent, and nothing but constant vigilance can protect the practitioner from the results of an erroneous diagnosis.

SMALL-POX AMONG THE INDIANS.—Official information having recently been received by Dr. Benjamin Lee, Secretary of the State Board of Health, from the Secretary of the New York State Board, of the existence of small-pox among the Indians of the Cataraugus and Allegheny Reservations in that State, he at once telegraphed instructions to Dr. J. L. Stewart, of Erie, Medical Inspector to the Board for the Lake District, to visit the Cornplanter tribe in Warren county, the members of which are in constant communication with those of the New York reservations, and take the necessary means for their protection. The instructions were carried out with commendable promptness. The entire tribe was vaccinated, and the chief, Marsh Pierce, promised to forbid his people from crossing the border until the disease had disappeared. He rendered every assistance to the vaccine physician, and extended the thanks of himself and his people to the State Board for its timely action in their behalf.

LEARN WISDOM FROM THE JAPS.—We are accustomed, those of us who do not think, to regard the Japanese as a benighted race, whose order of intelligence is not of the highest. That such a notion is erroneous we must perforce admit when we learn that the Japanese Sanitary Association, which has 4700 members, was founded in 1883, and now has twenty-eight branches in different parts of Japan. At the annual meeting of the association at Tokio, in May, 1887, there were 20,000 visitors to the hygienic exhibition. Such facts evidence the very highest order of intelligence, and we will do well to pattern after our neighbors of the Orient.

YALE ATHLETIC ASSOCIATION.—The annual meeting of the Yale Athletic Association was recently held, with President H. F. Walker, '89, in the chair. The treasurer's report showed a balance over all debts in the treasury of $139.44. The election of officers resulted as follows: President, E. Bayard, '90; vice-president, Davison, '90; secretary, Walcott, '91; executive committee, Thompson, '91, and Casement, '90.

YELLOW FEVER IN FLORIDA.—"Had their Legislature responded to the demands for a State Board of Health, and given it a sufficient appropriation, we do not believe there would have been a case of yellow fever in Florida to-day," says the *Ohio State Sanitary Record.*

SANITARY ARCHITECTURE.—An exchange very truly says that the architect in general practice cannot insist upon a due observance of hygienic laws in house construction, and compete successfully with those in the profession who are less conscientious in such matters. If his clients neither know nor care whether a house is well or badly drained, why should he drive away business by demanding that he shall pay for good plumbing? This is sadly true, and the only remedy lies in universal sanitary education. When the people know how extremely important sanitary architecture is, then they will demand it.

GYMNASTIC APPARATUS.—We recently had the pleasure of inspecting the new establishment of A. J. Reach & Co., at No. 1022 Market street, and we were not only agreeably entertained, but instructively edified to see to what perfection they have brought the mechanism of exercise. Physicians will do well to visit this establishment (we can assure them a hearty welcome from the genial proprietors), for they will there see handy apparatus for the development of any and every part of the body. Your education is incomplete until you have seen what the "Reach" inventive genius has done.

THE USE OF WATER AT MEALS.—There seems to be a popular superstition that it is unhealthy to drink water at meals, and many a one deprives himself of what would be a pleasure, in consequence of this idea. We have always felt that this notion was without good foundation, and now we are glad to find that high authority in the *British Medical Journal* supports us in this view, as does also Dr. Yandell, the Health Officer of El Paso, Texas, who, in a recent communication, strongly refutes this popular but erroneous idea. We can, therefore, safely say that it is not at all injurious to health to drink water at meals.

CHEESE POISONING.—Many cases of cheese poisoning have been rp orted this season in Ohio. *The Sanitary Inspector* states that the State Board of Health of that State was, within a short time, notified of several cases, distributed as follows: At Urbana, sixty-five cases; Mansfield, fifty; West Liberty, thirty-five; Mutual, fourteen; Marion, fifty. The symptoms were vomiting, accompanied with much pain in the stomach, and, in many cases, violent purging. The sickness usually lasted from twelve to forty-eight hours, and great prostration was a marked feature, with syncope in some cases; no deaths occurred.

DIET FOR SENSITIVE STOMACHS.—Cold food, says the Boston *Journal of Health*, is more easily kept on a sensitive stomach than hot; so in cases where it is rejected in the ordinary warm or hot form, it had better be tried as nearly frozen as may be taken. In many fevers this would be a decided advantage. Milk may be administered in a frozen state, often with positive advantage. The *Sanitary Era* adds, from frequent instances, that ice cream suits admirably some conditions where hardly any other food is acceptable. This, we believe, to be true when the stomach is inflamed, and we would recommend it to our readers.

THE CARE OF THE THROAT AND THE NOSE.—"Everything commences at the beginning," if we may be allowed the hibernianism, and since the throat and nose are really the beginnings of the *inside* of all of us, it is there that many serious diseases have their starting point, so to speak; it is there that many diseases find entrance into the system. Hence it is that the care of the throat and nose are so important, and for this reason we earnestly urge upon our readers to carefully read and attentively heed the series of articles on this subject from the pen of Dr. Carl Seiler, the publication of which we commence in this issue.

WHAT PROHIBITION DOES. — A gentleman who has spent several months in Kansas, says: "Kansas boys ten years old and under never saw a saloon since they can remember. They never saw a man under the influence of liquor. On arriving at man's estate they will have no more desire for drink than they will have for opium or hasheesh." This is very true, for, we believe, that in very many cases the habit of drinking liquor has found its origin in the imitative propensities of humanity, and where the example is not set the habit will not be acquired.

COMMERCIAL DISINFECTANTS.—At the end of a circular on small-pox lately issued by the State Board of Health of Connecticut, we find the following excellent admonition in regard to disinfectants, given in good strong English, emphasized with heavy type: "There are a large number of proprietary 'disinfectants,' so-called, in the market. Most of them are simply deodorizers or antiseptics of perhaps some value to stop a stink, but are entirely untrustworthy for disinfectant purposes."

STEAM EVAPORATES WATER FROM A TRAP.—Last Spring, about a week or ten days after the opening of one of our large and fashionable suburban hotels, the proprietor noticed some very bad smells about the premises. An investigation was started and it was found that the soil, or drain pipe had been laid in close proximity to the steam pipe, so that the heat from the latter had evaporated the water from the trap in the former, thus leaving open communication from the cess-pool to the house. We do not recall having ever read of a case just like this and it will be well to bear it in mind.

EXERCISE BY WALKING.—We were recently up in New York State, and were delighted to see how popular walking is there. Of a cool, windy October afternoon, the more popular country roads presented a lively spectacle, like almost to that of a city street. Children, men and women, old and young, all out for a brisk walk that brought color to the cheek, appetite for supper, and health to the whole body. We cannot too strongly urge upon our readers the value of walking as a preservative of health. He who regularly walks five miles daily, will have little need for medicine.

CRAMPS IN THE LEGS.—Dr. R. W. St. Clair, writing on this subject in the *Medical Age*, says that when he has a patient that is subject to cramp he always advises him to provide himself with a good strong cord. A long garter will do if nothing else is handy. When the cramp comes on take the cord, wind it around the leg over the place that is cramped and take an end in each hand and give it a sharp pull—one that will hurt a little. Instantly the cramp will let up, and the sufferer can go to bed assured that it will not come on again that night.

IS THE LENGTH OF HUMAN LIFE INCREASING? — "Yes," says Mrs. Plunkett; "In ancient Rome, in the third century after Christ, the average duration of life in the most favored class was thirty years (of course, it was much less amongst the poor). In the present century the average longevity of the same class is fifty years. In the sixteenth century nearly twice as many died before they reached maturity at twenty as do now. In the sixteenth century three persons out of a hundred survived seventy years, now eighteen do.

DR. A. L. GIHON.—The numerous friends in the East of Dr. Albert L. Gihon, of the United States Navy, will be pleased to learn that he has been ordered to New York, to take charge of the Naval Hospital in that city. Dr. Gihon is not only one of the most active and progresvive workers in our profession, but is known to all the scientific world for his especially good work upon hygiene. He will be warmly welcomed among his very many friends in the East.

TOBACCO AND VITALITY. — When Europeans first visited New Zealand they found in the native Maoris the most finely developed and powerful men of any of the tribes inhabiting the islands of the Pacific. Since the introduction of tobacco, for which the Maoris developed a passionate liking, they have from this cause alone, it is said, become decimated in numbers, and at the same time reduced in stature and in physical well-being so as to be an altogether inferior type of men.

Horse-flesh as Food. — Horse-flesh is said to be regularly exposed for sale in the butchers' shops in Liverpool, and the authorities do not interfere so long as the meat is sound in quality and is offered as horse-flesh. A case recently came up in Liverpool in which ill-smelling horse-flesh was offered for sale, and a witness said he killed one or two horses every week; certainly a surprising statement when one thinks how few horses that are unfit for work are suitable for food.

The Right Way to Practice Medicine.—The Central American doctor receives a yearly stipend for keeping his client well. The amount varies, according to circumstances, from $150 to $400. Poorer patients, of course, in the same ratio. The doctor attends in sickness and in health—truly the friend of his patient. Should the latter die during the year the money is refunded *pro rata*.

The Study of Malaria at Rome.—A proposal of Professor Celli's, to establish in the malarious region that encircles the city of Rome a number of meteorological stations for the special study of the fever and its climatic conditions, has been favorably received by the Central Meteorological Council and by the Board of Public Health at the Ministry of the Interior.

The London Sanitary Protective Association, of which the Duke of Argyle is president, is a society the objects of which are to provide its members, at moderate cost, with such advice and supervision as shall ensure the proper sanitary condition of their own dwellings. The Association has no capital stock, and cannot be used for purposes of profit.

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PLACE OF MEETING,
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TIME OF MEETING,
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State Superintendent of Registration of Vital Statistics.
BENJAMIN LEE, M. D.

THE ANNALS OF HYGIENE.

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COMMUNICATIONS.

FRAUD IN DRESSED MEATS.*

BY LEW SLUSSER, M. D.,
CANTON, OHIO.

While a member of the Ohio Legislature some years ago a charge was made by an outside party that the superintendent of one of our State insane asylums, with the connivance of the steward, who was a relative, was in the habit of purchasing spoiled beef at a reduced price, boiling it in charcoal water, feeding it to patients, charging the State the market price of good beef, and between the superintendent and the steward the profits were divided. The papers in the case were referred to the standing committee on benevolent institutions, the matter investigated, and while there was some ground for the charge, not sufficient to convict. The committee felt themselves justified under the circumstances in making what is termed, in political parlance, a white-washed report. The developments, however, suggested the enactment of a law prohibiting the appointment of a steward who was a relative of the superintendent. That law, I believe, is still in force.

At a later day, while on a tour west, I fell in with an old acquaintance, who was at the time in the employ of the Chicago stock yards. In a conversation with him about the beef and cattle business, I incidentally mentioned that I had been using in my family canned meats put up in St. Louis. This excited a disparaging remark from my friend, and asking for an explanation, he informed me that the beef usually canned was of cattle unfit for market on foot. They were either sick or had been injured in transportation, were sold at a reduced price and converted into canned meat. The disclosures he then made of the imposition practiced upon the community in the sale of diseased meat so impressed me that I have never since, knowingly, indulged in canned meats of any kind.

I cite these two instances, bearing upon my subject, to illustrate the fact that neither the man of professed piety, to which the accused party in the first instance laid claim, nor the man of reputed business integrity, known to have unlimited credit in bank, which was applicable in the second instance, can always be trusted when the accumulation of the almighty dollar is involved.

Within the last few years an enterprise of gigantic proportions has been formed by men of unlimited capital combined together for the purpose of supplying the cities and larger towns of the country with dressed meats. They have abattoirs at Chicago, Kansas City and St. Louis. They control the price of cattle shipped from the west and the price of dressed beef in the markets of the east. Having secured a monopoly of the business they have it in their power to manage it to suit themselves. Like dealers in the Stock Exchange, it matters little to them who suffers, so they reap profits. This syndicate will furnish different qualities of beef, depending upon the ability or disposition of the purchaser to pay. Their best quality is sent to the cities east, where it commands the highest price, while the ordinary and inferior qualities come to smaller towns like Canton. In proof of this it is only necessary to compare the price of merchantable cattle in Chicago with the figures at which the agents of Armour & Co. sell dressed beef in Canton. For the last three months I have given attention to the markets, and while cattle in the stock yards of Chicago were quoted on foot at from $5.00 to $5.75, dressed beef shipped here in refrigerator cars was sold to our butchers, by the side or carcass, at $4.00 to $4.75. Would not this indicate that something was "rotten in the State of Denmark?" Admitting that there is a grade of cattle brought from the west and sold in the Chicago stock yards much below the price of merchantable cattle, they are not such cattle as are purchased for immediate slaughter. Much of the Chicago beef brought to this market has the appearance of good beef, as coming from fat cattle. The conclusions arrived at by different parties of different sections of the country, who have investigated the subject, are that the cattle in question are diseased, and sold at a reduced price, purchased by the Chicago combine, and furnished to our people as good beef.

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* Read before the Ohio State Sanitary Association at Canton.

It is in proof that cattle are shipped from the plains with suspected pleuro-pneumonia, big jaw and Texas fever, and on arrival at Chicago the disease has developed. They are sold at a discount, slaughtered and the carcass sent east in refrigerator cars. The same is true of "downed" cattle, such as have fallen while in transit and been trampled upon by other animals in the car. They are badly bruised, sometimes pounded to a jelly; as a consequence, inflammation follows and pus is formed within the deeper tissues. To remove the appearance of this bruising the animal is freely bled in the killing, the superficial discoloration removed by the use of salt, vinegar and brown paper. The pus is discovered in cutting into the round. It is impossible to tell by looking at beef whether or not it came from a sick animal. A steer may have been far gone with Texas fever or big-jaw and no evidence of disease perceptible in the appearance of the meat. An employee of a meat market in this city, where Chicago beef is sold, informs me that it was no uncommon occurrence to find in a car-load of beef just arrived quarters that were "slimy" and "sticky," which condition indicated a putrefactive change. That he had frequently, in cutting round steak, opened up a sac of purulent matter. It is well known that at one time during the past summer twenty-eight quarters of Chicago beef were turned over to an establishment manufacturing a fertilizer. The meat had become putrid. At another time five quarters were given to a party and fed to his hogs.

A cattle commission man of Chicago testifies: "We have cattle shipped to us to sell which we proceed to dispose of as best we can. Some stock will be injured in transit, others will be too sick to proceed further. We sell these injured and diseased cattle not because we like to, or because we believe it to be right, but because there is a local demand. We want to realize as much as possible for the consigner."

Another commission man says: "We frequently get car-loads of sick cattle. They are usually Mexican or South Texas cattle that take the Texas fever while passing through the State. It spreads with frightful rapidity, and often an entire shipment will be affected and a large percentage of the animals die while being transported. I have sold consignments of just such cattle at a discount to parties who represent the Chicago dressed beef combine. I have sold car-loads of Cholera hogs to butchers in East St. Louis whose shops are off somewhere in the woods."

A live stock agent of the Pennsylvania Railroad says that even with the best refrigerator cars it is impossible to transport grass-fed dressed beef any great distance in sound condition. Freight trains are subject to frequent delays, and thus are the meats likely to be impaired and rendered unfit for use.

How are our people to be protected against such imposition? By a legislative enactment prohibiting the sale of any beef that has not been previously inspected on foot. But, say the friends of the Chicago combine, they have local inspectors. Yes, of their own selection. Men who hold their places at the pleasure of the combine. A travesty upon honesty and fair dealing. The inspection of the carcass is not always satisfactory. It is impossible to tell whether the animal, previous to being slaughtered, was sound or not. It may have been poisoned, had Texas fever, big-jaw or pleuro-pneumonia, and yet show no perceptible change in the appearance of the meat. There is a law prohibiting stockmen from bringing cattle from other States into Ohio which have been exposed to certain contagious diseases. This is a measure of protection against pecuniary loss in the event of our home cattle contracting some disease. How much more important to protect ourselves against loss of health, the result of eating unwholesome meat. In the putrefying process a poison is developed, which is sure to affect the system to a greater or less extent, depending upon the inherent power to repel the invasion. It is conceded that all chronic diseases, except those occasioned from violence, poisons and infections, have their genesis and development in what we eat and drink; the kind, condition and proportions of each used; the state and rapidity with which they are taken in; the intervals at which they are drunk and eaten, and the quantities of each consumed. Beef is an important factor in alimentation. It is essential to the enjoyment of vigorous health, to man's highest physical and mental development. It is to the interest of the government to see to it that the people have healthful food. If the use of cheap meat does not imply cheap men, as it was said in reference to cheap clothes during the Presidential campaign, then should our government exercise the prerogative of protection for the sake of protecting those who were in the service. When Bismarck interdicted the admission of American pork into Germany it was by reason of the discovery of trichina, and he would not allow his people to be subjected to the risk of injury. No fresh meat can be offered for sale in the markets of Germany without first passing inspection, and by an expert who examines closely with a microscope. Investigation and research, conducted by men of ability in Europe. has settled the question to a demonstration that big-jaw is a malignant disease of a cancerous character and calculated to generate cancer in the human subject. Colic, nausea, vomiting, diarrhœa, headache, confused intellect, nervous prostration, epilepsy and paralysis have all been directly traced to unwholesome meat.

As American citizens we boast of our progress in commerce, agriculture, manufactures, literature, the arts and sciences and the general diffusion of knowledge among all classes of society, but what have we done as a nation, or as a State, to advance our sanitary condition in the direction which so vitally concerns the public health, the dearest interest of every family in the land? Truthfully can we say the government has done nothing. It has not even recognized the necessity of a bureau of health, so essential from a sanitary point of view. The late skirmish with the yellow fever in Florida, a pestilence so disastrous to life and business interests, betrays our inefficiency as a government to meet and properly combat a violent epidemic. In the effort to accumulate the almighty dollar, and the contest for office, the laws of hygiene, so essential to the preservation of health, are ignored. The first great duty of a nation and a State is to protect the lives of its citizens by teaching them how to live, how to guard against disease and how to improve the race. The sanitary condition of a community is intimately associated with its moral and religious welfare. People cannot be good or happy if they are not healthy. Millions die every year from preventable diseases, and it is the duty of every honest concientious physician and philanthropist to do what he can to enlighten them in those things which so nearly concern their temporal happiness.

HOT AIR vs. STEAM IN THE HEATING AND VENTILATING OF DWELLINGS AND PUBLIC BUILDINGS.*

BY THOS. HUBBARD, M. D.,
TOLEDO, OHIO.

This theme is a very comprehensive one for discussion including as it does most widely diversified conditions of man's surroundings. It would seem scarcely profitable to attempt to cover the whole field—so many complicating questions arising here and there. The problem of heating and ventilating homes surely does not present the same features as obtain in public buildings. Again, each of these great classes has special subdivisions, materially influencing the solution of the problem.

Glancing over the great class, *dwellings*, the question presents as diversified a picture as does home-life in its broadest sense, and has the same characteristics impressed on it as mark the important phase of life. There is the home with all its features bearing the stamp of necessity. Scanty cubic living space and forced economy in fuel consumption have a bearing on our theme. Here can we often study, admire, (and commiserate)—a remarkable characteristic of the physical man. The marvelous faculty of nature in adapting herself to altered environment solves many a problem anxiously studied by the philanthropist, and rescues,, in a way often incomprehensible, the individual and the masses from threatened degeneration or destruction. A hasty review of a few details of the ordinary home-life of the poorer classes will illustrate this. At home limited-living space and forced economy in fuel consumption go hand in hand. Scanty living-space implies of course no ventilation. Where is the compensating agency to offset this outrage against the laws of health? Forced employment generally means out-door work and this counteracts to a certain degree the deleterious influences of the hours passed in the unhealthy home. Again, forced economy in fuel consumption may aptly be applied to the man himself. Individually, a minimum amount of heat generating food, exposure and manual labor exhaust much of this supply during the daytime. He goes home overstocked with oxygen, as it were, but the other elements necessary for combustion are exhausted and he enters his over-heated, close, living-room with that sense of relief which bespeaks physical exhaustion, and is an appeal of the heat-producing centers for artificial aid until their energy may be recuperated. Where necessity thus reigns hygienic teaching with reference to ventilation will ever be unheeded.

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* Read before the Ohio State Sanitary Association at Canton, O., Nov. 14, 1888.

In the homes of the opulent quite the opposite surroundings are met. An excess of living-room and unlimited fuel supply, the bodily heat producing power only perverted by sedentary habits and other violations of the laws of hygiene. Ventilation here is merely a question of individual demand.

The condition of assembly halls with reference to their healthfulness and comfort, plays but a comparatively small part in its influence for good or evil on the health standard of the community. This influence has to do rather with the causation of acute diseases, since attendance is almost entirely voluntary and at intervals.

Where, then, shall we look for a test-field that will confine a discussion of this subject in such a manner that general principles can be clearly defined; and one in which a successful solution of the problem will confer the greatest good on the people?

The interest of the community and state centers in the *public schools*, intrusted, as they are, with the education and training of the mental, and to a large extent of the physical natures of the brain and muscle of the succeeding generation. Again, this is a representative test-field since principles successfully applied here will cover a large territory of demand in other fields.

The question of *ventilation* immediately assumes a greater importance than that of *heating*, since the latter has been only too successfully solved, but the two conjointly are more important than either and deserve earnest study. Manifestly economy plays an important role, else the ventilation question would long ago have been solved on mechanical principles and by artificial agencies. An *economical, natural, heating and ventilating system* is what is demanded in the above mentioned test-field.

It is a most inviting field for speculation and theorizing, and its advance to its present high standing as a scientific achievement has been marked by little by-plays of ingenious pseudo-scientific reasoning, amusing in the extreme when looked back upon, but every earnest thought adding its quota, be it ever so small, to the evolution of the great principle.

Carbonic acid gas: The very word suggests a subtle, treacherous evil, and yet it merely represents the equivalent of force utilized by us. Attacks against it have been waged, based on divers theories concerning its nature and physical properties. By many, and for all time, the simple natural method, *diffu-*

sion, has been depended upon to relieve the breathed atmosphere of its surplus. It does very well in simple, uncomplicated cases.

But the details of such a method; one would invite it to leave the room by an outlet above, another below. Both are right. All they need is sufficient area of free communication with the outer air, and, regardless of the heat question they will succeed. An area of about five inches square per capita is sufficient, and then it is only a question of heating capacity. But the very suggestion of *an open fire place*, or *grate*, soothes the would-be hygienist into a feeling of relief from the influences of this enemy of health. I know of an instance where a skillful architect ventilated (!) an assembly room of nearly a thousand seating capacity by six small grates, and received great commendation from the people. Consider that one grate in an ordinary room insures a fair ventilation for about five persons under favorable circumstances. But we are learning to fear this gas less as our knowledge of its properties increases, and to-day it is only considered as an index of degree of vitiation merely for convenience. It is the *organic matter* that is given off by the lungs in the form of watery vapor and gases that is to be feared. Our estimates based on the quantity of carbonic acid are only approximate, and are often far astray, since the mentioned deleterious matter does not obey the same laws of diffusion as does carbonic acid gas. Indeed, it is doubtful if simple diffusion, unaided by currents of air, can accomplish the removal of this deleterious element of breathed air. It seems to accumulate in layers of greater or less depth influenced mainly by temperature and humidity.

Its exact nature is unknown, but, although the air direct from the lungs is free from bacteria, yet wherever this organic matter may be deposited, as on the walls of an ill-ventilated room, there do bacteria find a favorable nidus for growth and development. This point cannot be emphasized too strongly since manifestly there is a possibility of daily accumulation of this poisonous element of breathed air in spite of a thorough "airing" of rooms once or twice daily. As a proof that the organic matter does accumulate on walls and windows, a window pane (of window glass) from an ill-ventilated room held over a flame and heated gives a strong odor of burning nitrogenous matter.

The efforts directed toward purifying the air must be continuous and most active during the period when vitiation is actually taking place. What is the first indication then for thorough ventilation? *As strong currents of air as are consistent with comfort.* The outgoing currents must be constant and capable of mechanically removing the non-diffusible constituents of the air of the room.

Let us look at another feature of the problem which points to the same conclusion. The average space allotted to each child is about sixteen square feet. There is a fallacy in this statement. The distance from centre to centre of school desks is not over three and a half feet, giving only about thirteen square feet to each child. *Reserve air space* in the room is of only indirect benefit to the child. Under ordinary circumstances the current of expired air is not dissipated in this limited space and the air from the lungs of one individual, ladened with a certain amount of effete products, or even specific poisonous elements, may be directly inhaled by another. Thus in the absence of liberal floor-space to each child strong currents of air are necessary to dissipate the current of expired air.

In regard to *cubic feet per capita*, this is an important point. As we shall presently show, the temperature of the warmed column of air is the important factor in establishing the air currents, and the capacity in cubic feet *per capita* is in proportion to this temperature. Hence, too great a demand in cubic feet means a very high temperature at some point in the system. Where the currents of fresh air are well disposed and uniform, 1500 cubic feet, *per capita* each hour may be considered a fair supply.

Of course, where educational methods are exorbitant in demands and the fresh air supply is itself more or less contaminated, as in large cities, the school must be regarded as a sort of convalescent hospital and a standard of purity be demanded that will offset other depressing influences.

It is not of so much importance at what point the warm air is introduced, but, for its influence in maintaining an equable temperature at floor and ceiling it seems best to introduce it near the floor. For the same reason the out-lets should be in the base board, and if height of ventilating shaft is sufficient, the out-going air-current should be allowed to circulate under the floor on its way to the main ventilating shaft.

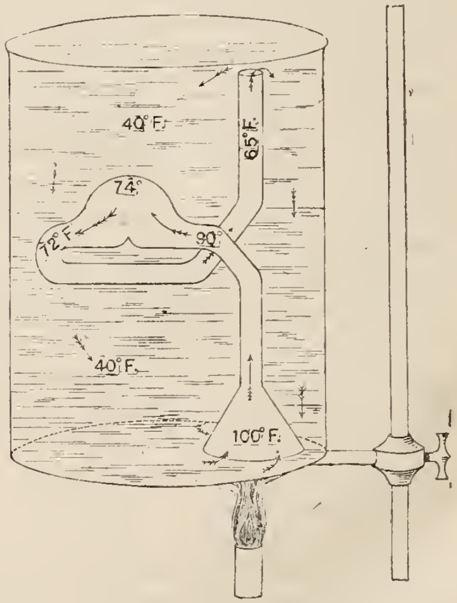
The ventilating shaft is the culminating stroke of engineering skill in this strife against poisonous air, and its height and section area may be taken as an index of the maximum capacity of the system. It must be constructed on strictly scientific principles and accurately proportioned to the demand to be put upon it, amount of exposure, etc.

Let us now return to the heat source of this outlined ventilation system. It is needless to discuss any heat source but *convexion*. *Radiant* heat is a failure from an economic point of view since only about thirteen per cent. of the total heat represented is available. Shall it be direct convexion (so-called radiant) or indirect? It may be laid down as a fact proven by many costly experiences, that, *central heating is all essential where ventilation is sought*, and such heat source must be as far below the out-let of the main ventilating shaft as possible. In other words a central heating apparatus in the basement represents to the system a certain amount of force *derived from its very position*. The distance between *in-take* and *out-let* is increased thereby. Such heat source must have an enormous capacity and reserve heating power to meet the great variation in temperature of this latitude.

Conceive, then, a heating apparatus in basement in free communication with the outer air; warm air conduits to the room above; out-lets at baseboard in communication with air space under the floor leading to the main ventilating shaft, which latter is as high as practicable and of ample section area. We have here a great warm-air system, crooked, expanded, and then spread out over a large area, then straight and opening freely above. Nevertheless it may be considered as a *crooked column of air* having a great deal of friction by reason of its many angles. The loss of heat is considerable *and thus is one object fulfilled*, and warmth of the room secured. Having outlined a system let us consider some of the principles involved. We can take for a maxim to govern any successful system of *natural* ventilation the following: *Concentration of heat source* (*central*), *and conservation of all the heat not needed to warm the rooms suitably*, are of prime importance. Reduction of the temperature of any part of the great broken column of air to that of the atmospheric air loses to the system, *as a force of upward movement*, *all* of the column of air above that point. If the air leaves the *room* at the same temperature as the outer air, then is the influence of all the column of air above that point lost to the system. The great principle behind the whole and causing the movements in the air is very simple. The air in the system of air ducts, including the room also, be the course ever so irregular, is warmer than an equal column of outside air, and is consequently lighter. It is *displaced upwards* by the air from without, which in turn becomes warmed, is displaced upward and rises to the out-let above.

To review the salient points of practical heating and ventilating systems; *a central*, *concentrated*, *heat source at as low a point as is consistent with getting good fresh air; a finely adjusted system of air conduits into and out of the rooms to be warmed*, *admitting of just the proper amount of heat dissipation; a ventilating shaft of proper section area*, *protected from direct exposure*, *and having free out-let at as high a point as practical.*

A good practical illustration of the principle upon which systematic movements of air-currents can be secured may be given in the following manner: A glass tube of about ⅜ of an inch in diameter should be blown after the sketched design. This should be placed in a glass beaker and both filled with water to a point above the open end of the tube. A piece of asbestos paper with small round hole in it should be placed under the beaker with the hole directly under the funnel end of the tube. Fragments of glass or platinum aid the heating of the water within the funnel end, a small flame of a Bunsen burner being applied below. A little bran thrown into the water will show the direction of the currents. Before applying heat from without, the tube should be filled from above with hot water, and the water around must be kept cold by addition of cold water. When heat is applied the water in the tube will rise slowly for it is hard to maintain a great difference of temperature between water within and without the tube, and it is obviously this *difference of temperature* that is the causative factor. The water within the tube is lighter than that without, and it is consequently *dis-*



placed upwards by the heavier column of water acting through the places of entrance in the sides of the funnel below. A tube of non-conducting material would require less careful attention to details, and a larger beaker of cold water would improve the result.

The application of this experiment to the ventilation system is easily seen. (The water stands for the air.) The glass beaker of water represents a certain volume of atmospheric air *around* the building to be heated and ventilated. The system of tubes stand for the air flues conveying water from in-take below where it is heated into the room, (the bulb portion,) and thence, having circulated under the floor, out at the exhaust shaft where it mingles with the water surrounding the system.

The temperatures marked are the averages of many trials of a system of ventilation in operation. A small size of the beaker of water necessitates keeping the temperature down by addition of cold water. The principle is easily grasped and it forms a basis for a crucial test of any proposed system of natural ventilation.

It is obvious that the cooling of the atmosphere (the water), in any portion of this system, to that of the water surrounding it destroys to the system all of the column *above* that point as a factor in producing an upward current.

The Smead System of Heating and Ventilating has been described in its essential features. The details are scarcely necessary in a general discussion. In viewing the finished picture of any great achievement, be it in the realm of science or one that is directed toward bettering the condition of man, counteracting the degenerating influences of altered environment, one cannot but turn with great interest toward its growth or evolution. The first exposition of the principles here involved was not of this age. It came about in the days of primitive man when first he heated his cave dwelling by fire and made provision for the exit of the smoke. The artificial *heating* of dwellings has kept pace with civilization, the inventions of pressing necessity, while the other portion of our subject, the *art of ventilation*, has been neglected until the present era when the elevation of man to a high plane of existence demanded improvement in his surroundings, and the withdrawal of all pernicious influences, and especially during the developmental age.

It is now nearly thirty years since Mr. Henry Ruttan propounded his theory of introducing hot air into the room and providing a ventilating shaft for its escape, but he lacked the ability to apply his theories in a practical manner. During the period from 1866 to 1872 numerous and costly experiments were made based on the principles laid down by Mr. Ruttan, each time coming a little nearer a successful solution, but after as many trying defeats.

It is to the engineering and executive ability of Mr. Isaac D. Smead that the present successful introduction of the system is due. The beneficial effects of good ventilation, by whatever means secured, are being appreciated, and soon the popular voice will demand its introduction, in appropriate form, into the home, school, and public assembly rooms, and regard gratefully those who have been instrumental in perfecting and making available any methods to that end.

WHAT IS SANITATION?*

BY G. C. ASHMUN, M.D.,
Health Officer, of Cleveland, Ohio.

With such words of welcome, so kindly expressed, and with such interest manifested in the objects of this association, there is no occasion for a formal statement of the reasons why we are gathered here. But we would express our full appreciation of your interest and courtesy to us, and accept it, in behalf of the important subjects we are to consider. There is no presumption, it appears to me, in assuming a welcome in every intelligent and active community, these days, to a discussion of any and all questions affecting either the health or commercial interests of the people. The people of this country are credited the world over, with being wide awake to their own advantage, and surely no richer possession can be sought for or reached, in this life, than physical and moral soundness. And "Sanitation," in its broader meaning, takes into its objects both of these aims, all that makes men, women and children better.

The, perhaps, not strange view held by some in regard to Sanitary Organizations, health boards and health officers is, that they are engaged somewhat exclusively in dealing with dirt, and disease and death. With such a view, our coming to your city might have been interpreted to mean an estimate of conditions here! But let me say that, we are aiming not only, or primarily, at the badness of conditions that now are, in our communities, but also and much more to prevent the badness which we regard as liable to come.

The old woman inquiring for "*the head man for dirt*," and being immediately directed to the health officer as that person, represents an idea held by many people with reference to health authorities, and Sanitary Organizations. I would invite you, therefore, to a wider view and to consider a broader and more encouraging field of effort. It has been a somewhat popular estimate and statement that if people, in respect to health, only lived "*naturally*," all would go well and the best state and condition be reached. This is probably true, but the ideas of what constituted "*naturalness in living*" would be found wide apart. To some "*naturally*," means life in caves, tents or huts, with coarse food and little clothing, freedom of movement, and no intellectual burdens or worries, —*a la Indian or Hottentot*. "*A state of nature*" for man has been made to mean not highest cultivation and development, but ignorance of either causes or effects, a bare animal existence. Such certainly is a mistaken view, and false to every aspiration which lifts men from brutality and indifference to self respect and the securing for themselves and others the comforts and benefits nature places within their reach. It is "*natural*" for men to reach out to and secure the best—to strive for advancement and advantage—to not rest satisfied bearing bodily discomforts and physical infirmities but overcome them. To become clean and good and Godlike. With this view of what is and is not "*natural*" to us, the vast array of equipment for individual, family, community and state life is not against "*nature*," but in so far as it is kept to a real ministry of cleanliness and good living, it is leading to a more stable and clarified production and type among men. And this vital movement in connection with the studies upon hygienic and sanitary subjects, is one of the recent evidences of clear vision and a broad grasp respecting the future of our state, country and the world.

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*Address in response to the "Adddress of Welcome" by the Mayor of Canton, at the meeting of the Ohio State Sanitary Association, November 14th, 1888.

For ages some thought has been given to the prevention and cure of disease, and more or less governmental effort toward securing vigorous, self-supporting, self-defending people. The Greeks and Romans with their abstemious habits, rigid discipline and exercise accomplished much. History affords, perhaps, no better record of health laws and observances, than in the Mosaic ritual, or better results in effects than in the Jewish race.

Other nations have imitated these historic examples and have been rewarded accordingly, showing beyond question that an observance of health laws leads to permanence in type and character, and showing conclusively that such a result as the preservation of health and prevention of disease is attainable, to a very high degree, both for individuals, communities and nations. With this view and in this faith we are with you, not with much that is new, perhaps, but with the old subjects dressed a little differently, and asking you who think and have an abiding love for life as a priceless boon, to consider with us what you can do to save lives, and to promote the well being of every age and class among you. We are not here to spy out, to define your especial deficiencies as a community, or to parade superior knowledge, but with you to study subjects of common interest, and to devise methods of common applicability to all our communities. There is no city or village, and we might say no location for any dwelling-house, in this state, where the soil is so well drained by natural means as to require nothing farther for the removal of surface or soil water. There are no places on earth where people can occupy a given space of ground for any length of time, without so overburdening the natural processes of purification as to make necessary some especial provision for the removal of the residuum waste of living. There is, probably, no large number of people anywhere, whether living single, or in families and communities, with and among whom knowledge and a constant regard for health always prevails and governs. There are none of our thriving, pushing, ambitious, commercial and manufacturing towns in which the strife for wealth does not lead some men who are managing affairs, to disregard to some degree the physical health and welfare of their employes. There are no places, known to me, where the conflicts between landlord and tenant, as to who shall repair, rebuild, or replace the broken or worn-out, are forever at rest! "*The ever old remains ever new*," and every day and age among all people must be kept up the strife against influences which impair and destroy the vital forces. Sanitary effort and success is much like all other humanitarian endeavors, in that it is prompted by an ennobling self interest. Whatever is done to make and keep the individual homes, or the public streets and places clean, sweet, attractive and wholesome adds in money value to all the property within the radius of its influence. And cleanliness, and a standard of cleanliness which tolerates no retrogression toward uncleanliness, is of itself an investment sure to bring rich money returns to any community attaining it. Such a standard of cleanliness is a matter capable of evolution and growth in a community. The oft condemned quality of imitation, seen among Americans, can be utilized by Sanitarians to secure the growth, and adoption into the habits of life, of the principles which make for health, and a strong, clean, intelligent manhood and womanhood.

It has been a fact of frequent observation with me to note the contagious element of cleanliness. One clean yard helps to secure others near it. And the illustration can be carried into all channels. It may be safe to say that, the time is not far distant when our corporate communities will regard the preservation of health and means for controlling all forms of contagious disease, as of at least equal importance with the protection of property. It is not so now, for while we find jails for thieves and engine houses and engines to extinguish fire, few if any of our towns and cities have places for the first case or cases of those spreading diseases, which sweep whole families and even communities out of existence.

How shall a sentiment be aroused which will demand and secure attention to these weightier matters while not neglectful of the lesser? There is a course of great promise opening and open to us as individuals, and as members of this association, in our relations to educational interests. Not only to our present schools, their buildings and courses of study, but in respect to opportunities for teaching on subjects which will dispel the dense ignorance upon sanitary questions.

There must be teaching of scholars and teaching of teachers—teaching of fathers and mothers—teaching of clergy and teaching of doctors—teaching of law makers and law executors, so that present and future generations may have some adequate perception of the relation of conditions which they are responsible for, to the diseases which afflict them.

How can it be done? In the regular lessons of schools and colleges, from proper text books—by lectures to each and all classes of people in every town—by such conventions as this, bringing together those of most experience and those of least.

What is best in respect to food, sleep, bathing clothing and exercise, and every defense against climatic influences, hereditary tendency, or acquired habits of body should be presented. Almost any family or number of families, or for that matter individuals or group of individuals may be safely classed, in sanitary matters as ignorant, indifferent, vicious or intelligent. Ignorance unquestionably leads to indifference, and both to vice, so that education is our reliance against all three. We sometimes hear an outcry against some of the assertions of men educated in sanitary science, as being "*alarmists*" and certainly we are all afraid of "*cranks*," no matter what the hobby they may grind upon! But it is not less learning nor stepping backward that we need, to free us from baseless anxieties, but clearer apprehension from more definite and exact knowledge both as to dangers and defenses in our living. For people to rise and say, "*if all lived as our fathers lived, or as we used to live when our town was small, etc., all would be well enough*," is simply a failure to comprehend the problem before them, and an ignoring of the principal features of the case. Things are not and cannot be at a stand still. Conditions must be met. A resident population of twenty or forty to the acre involves a care in many ways not important with two or four per acre! The essentials which so far constitute healthful conditions and healthy living are not numerous or usually expensive, and, unquestionably, simplicity and regularity in all the habits of life can be had without adding to our burdens. But all of nature's processes must have their opportunity, as to time, environment and the conjunction of forces. It is to furnish such opportunities by the removal of obstacles and aiding combinations and disintegrations, both vital and chemical, and thus secure freedom from offenses and dangers, that sanitarians are striving for. Every individual, family, town and state is compelled to meet these problems. There is no evasion. If disregarded they are met in the penalty attached. No better illustration can be cited, perhaps, than the question of disposal of common house garbage, in town and country. Soil drainage beneath and about a dwelling place, heating and ventilation of living and work-rooms—the work, the worries and the pleasures of life, all come in for iteration, and reiteration among the never-ending topics engaging health authorities and students of vital economics.

Men highly educated in literature and other branches of science are often neglectful and deficient in these matters,—to be of service, education in this field must be definite and reliable. Some of the most exasperating and deadly examples of ignorance in health matters, I have ever met, have been among people highly educated in most branches of study. When it comes to the enaction and execution of sanitary laws and ordinances, we are forced to recognize the strength of public sentiment as the governing power behind courts and juries. As in other matters laws not sustained by the sentiment of the people cannot long be useful. And a sentiment of support can be relied upon in any of our communities, when people learn of safety and relief through properly applied regulations.

In every city like Canton, and in almost any of the townships and villages of the state there are men and women, who, by consulting the literature of the day, on such subjects, could readily prepare and present most valuable papers. A physician, a lawyer, a clergyman, a mechanic, a farmer, any and all professions and callings have men in them who can do such work well when they appreciate the need. How better can time be spent than in learning how to save life by preventing disease? One of the greatest problems of the nineteenth century is presented, in the question of how to lessen the mortality among infants in our cities. Had there been as many deaths in Cleveland, Columbus or Cincinnati from cholera, small-pox or yellow fever during the last six months, as there has been from so-called cholera infantum, the people would have stampeded from the state! And when we add the deaths from diphtheria, scarlet fever, whooping cough and measles, all preventable, to a degree at least, we realize how apathetic we have become.

This fair land with its resources beyond estimate, with its people sprung from so many hardy stocks and roots, may and ought to furnish to the world its highest types of physical and moral development. The romance which formerly attached to the American Indian as the highest form of manly strength, courage and endurance this land could produce, no longer satisfies us, both because it was romance and not truth, and because we know that a better life brings better qualities. This country has possibilities in the physical development, courage and endurance of its men and women which will utterly dwarf all products of untutored and savage life. The patient, steadfast toilers in shop, study and farm, who give us the applications of steam, electricity, and all the inventions which make mere force and cunning weak and puny, furnish constant examples of higher organization and more persistent courage than the slayers of wild beasts, and the degraders of women! A civilization which is to endure must preserve the physical well being which gives the only secure basis for the superstructure of graces and knowledge to be reared.

In almost every instance where I have known the facts, where a health board has been organized in a town, and no severe contagious disease has appeared to justify its existence and expense, the prevailing sentiment among the people is to regard it an unnecessary addition to municipal machinery, if not altogether useless. But after a time, when the Board of Health has gathered and made known information respecting the best methods of dealing with contagious diseases, and enforces the laws compelling people to respect the common rights to pure air, water, food, sleep, etc., prompting the neglectful and restraining the vicious, the sentiment changes, and great demands are made upon the before despised board. The alive and pushing communities, as well as the apathetic, require help from Health Boards, and it is a grave responsibility laid upon the membership and executive officers of such boards, that they fail in nothing of what the people have a right to expect from them. We gather in these association meetings to learn of each others successes or defeats,—to gain by adhesion and attrition from such contacts as here take place,—to feel the "*touch of elbow*," by which we keep in line with sanitarians.

The question is pertinent to this occasion and to the members of this association, whether the whole work of fostering and developing an active public interest in all this field of sanitary effort, may not now be left in the hands of the state and local boards of health? Force is sometimes ineffective because of its divisions and indirectness, and now that such a large number of these local boards are in existence and functional activity, would it not be well for this association to merge its efforts into a support and cooperation with these official forces of the state? I present this question to the members of the association without argument for or against it, and ask your consideration of it, knowing as I believe, I do, that the only governing motive in the hearts and minds of this membership, is how best to use their influence and counsel to keep this impulse in sanitation stirring.

These meetings in various parts of the state, in one form or other, ought not to be abandoned. It would be a step backward to suspend any of the means this association has inaugurated for the awakening of the people to the importance of these subjects. And only on condition and from the belief that the same work can and will be as well advanced by state and local boards of health, could this association consider such a proposition.

The Ohio State Sanitary Association was organized and has lived on the courage and enthusiasm of men who saw and felt the need of effort to keep our state in her proper position among other states, and to arouse people to their dangers and privileges. After years of effort and many discouraging events, a sentiment was aroused and concentrated by this association, which resulted in the law creating a State Board of Health. Within the last two years, since the state board was created, almost every city, village, and hamlet in the state has either a board of health or health officers with some system of reporting to the state board established, by which the entrance, progress or results of any epidemic in any quarter of the state shall be promptly known. This may seem a small matter to some, but the possibilities to the people of the state, both in the presence of such diseases, and in the field of education are, in my judgment, beyond estimate. Some new faces are seen in our meetings from time to time,—some cheering words and signs come to us,—and still believing still pursuing we learn to labor and to wait.

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POULTICES IN EYE DISEASES.—Dr. Wurdemann, in a late number of the *Medical Record*, does well in pointing out the dangers of poultices applied to the eyes by unskilled hands. He says: "Many of the laity believe that the best treatment for sore eyes is a large poultice, preferably one of tea leaves, applied upon the eye to 'draw out the disease.' Eyes that have been treated in this manner are easily recognized. The effects of one of these engines of destruction have but to be seen to be remembered for a lifetime." Do not trifle with a sore eye, but consult a capable physician *at once.*

METEOROLOGY AS RELATED TO MORBIDITY.*

BY E. R. EGGLESTON, M. D.,
Health Officer of Mt. Vernon, Ohio.

Dr. B. W. Richardson, in "Diseases of Modern Life," says: "Withal, there is a general, if unwritten, knowledge that certain marked events of disease are often found occurring together, as if they depended upon some common influence. These are epidemic visitations. There are accumulated instances of sudden deaths from apoplexies, hemorrhages, congestion of the lungs, failures in the motion of the heart. The operating surgeon has a long run of successful operations, even of severe operations, then he has a long run of fatal operations, in which he knows that the severity plays no part in the general result. When we put all these facts together, though we even call them coincidences, for want of a better term, they point circumstantially to the limitation of the phenomena of disease, and to the dependence of these phenomena, however apparently varied, upon the operation of a few causes, active and external. The external causes that give rise to the phenomena of disease have remained steadily in operation, producing repetition of the phenomena in such systematized order that, from patient study of history, we might predict the recurrence of some of the phenomena, as astronomers predict the return of comets and the recurrence of eclipses. The causes have remained unchanged; the phenomena have followed with the precision of natural law."

Professor von Pettenkofer (*Pop. Sci.*

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* Read before the Ohio State Sanitary Association at Canton.

Mo., Apr., '85,) says: "In my view epidemics may only break out when the time and local conditions are favorable, and where these conditions do not exist an epidemic is impossible. * * * Such epidemiological facts, which cry aloud for the truth of the existence of local and time predisposition, stand as sure, as etiological elements, as the discovery of a microscopic organism in the intestines of cholera patients. Only ignorance and prejudice can ignore such facts. It is but a necessary logical conclusion that the comma bacillus, if it have anything to do with the infective material of cholera, must also have some relationship with the local and time conditions which favor cholera. And, further, the relationship must be discovered by the bacteriologists before they can explain an epidemic by the aid of their bacilli and before practical rules can be formed thereon."

These authoritative opinions are presented to show the necessity for more rigid investigations along the lines of natural law; for wider observations upon and records of natural phenomena; for broader comparisons of causes with results, whereby all the causes and conditions of disease may be classified and related. The demand of the times is for investigation and explanation of the efficient nature and modes of propagation and perpetuation of the material and occult causes of disease, epidemic disease especially. To bring the matter forcibly to mind I may refer to that great unsettled theory which numbers among its adherents some of the great minds of the age, and is as strongly opposed, the germ theory of disease. This theory has a practical side, one that will bear scrutiny, which may be stated thus: (1) The atmosphere is filled with germs, innocent, inocuous, conserving the purposes of nature as agents in the decomposition of devitalized matter; (2) the normal germ never attacks normally vitalized matter; (3) having attacked dead matter, and been propagated in it, it becomes an abnormal germ, capable of disseminating the noxious elements of the matter in which it is propagated; (4) the normal atmospheric germ, it is safe to say, never did and never will cause disease; while, it is equally safe to say, the abnormal, noxious germ of decomposition always has and will cause disease. From the published discussions upon the subject thus much may be accepted as proven and nothing else.

But, admitting all that critical science of the present time may admit regarding the germ theory, or any other theory of standing, we have still to face the question as to the prime cause of disease, and thus we turn to general principles.

No accepted theory explains the causes of the widespread depression of vitality which invariably attends prevalent epidemics of degenerative or zymotic type; if it did we should know why, during certain seasons, all, or nearly all, acute diseases are asthenic in character, and in another case why they are sthenic. No theory yet explains the cycles of epidemics; if it did the labors of those in sanitary authority would be simplified, and not so easily misdirected, and the prognostications of physicians would be more satisfactory.

It is no new belief that is urged, nor is it one that is unheeded or unappreciated in some degree, but it is undefined and unintelligently applied. Surgeons are painfully aware of larger losses during certain years or seasons, operative procedures being of similar nature and grade of severity and no less skilfully performed; the varying results are unaccounted for. Physicians observe tendencies to types of disease, and upon them prognosticate their epidemic or leading remedy; they admit into their prognostic estimates the diurnal variations of intensity of morbid action, exacerbations and remissions; they admit the results of climatic and thermal vicissitudes, of atmospheric perturbations, of the presence or absence of ozone, of the excess or deficiency of positive atmospheric or negative terrestrial electricity; and yet with how little of the clear understanding so necessary to practical application, how little of that inexorable logic which deduces from demonstrable facts!

Why do certain diseases become epidemic? Because, first, preceding or simultaneous with the major epidemics there are wide-spread states of depression of the animal powers, which determine marked susceptibility to the contagion of the prevailing disease. I believe the experience of every observant physician wlll substantiate this proposition. Perhaps the most notable instances are during epidemics of typhoid, malarial and yellow fevers, cholera, dysentery and diphtheria. Tissue degeneration is a marked feature of them all, and during their prevalence most cases of acute disease present, in some degree, characteristics of the type. Nor is this all: closer observation clearly demonstrates the fact that states of relative good health during the reign of these depressing influences are degraded as well. Second, because the morbid element finds in the prevailing conditions of degradation the conditions best suited to its propagation and perpetuation. This, in the very nature of things, is a necessary consequence, for, the preceding being true, there is no longer the normal degree of vital resistance; or the more conditions become unsuitable to normal vitality the more they become suitable to morbid action.

Referring once more to disease germs it is seen how conditions for their propagation are thus fulfilled; for even if animal matter with which they are brought in contact is not totally devitalized, it is so degraded as to determine the *susceptibility* so widely recognized; and increased or diminished susceptibility, and a more or less virulent contagium, go hand in hand with, and in strict proportion to, the greater or lesser intensity of the causes of depression of animal vigor. On such grounds it is easily understood why sporadic cases of the diseases which are capable of becoming epidemic do not become so; why they manifest so little malignancy; why they are so little contagious, and why little or not at all infectious.

From such premises it is difficult to avoid the conclusion that animal bodies are responsible, in the second instance, for their own morbid states, the first depending upon the external conditions referred to. Spontaneous or self-generating specific diseases are not strange to the experience of any practitioner, puerperal septicæmia, specific parotitis, scarlatina and diphtheritic angina having fallen under my own observation, for the cause of which I unhesitatingly deny exposure to an infected atmosphere, to contagious germs, to foreign agencies of any and every sort. It is very easy to say we don't know about these exposures; I say we do know, it is our business to know, and the proof is within reach in our ability to trace backward to the identically depraved functions and tissues which gave origin to such objective signs.

I believe, therefore, that the ultimate causes of epidemic diseases will be found to lie in the abnormal or unusual operations of the natural forces; that these induce in animal bodies states of depression, tissue degradation and susceptibility; that these in their turn breed their own morbid action, or lay open the individual to onsets from innumerable external disease elements, material or otherwise, including germs. The forces concerned in these results are:

1. *Electricity*, with its modifications, positive, negative, magnetic and ozonic; and its transformations or correlatives, heat and light, with their modifications.

2. *Gravitation*, with its modifications.

3. *Atmospheric pressure*.

For present purposes the first, only, of these elements will be considered.

Whether true or not, as some meteorologists claim, that all the great atmospheric and oceanic currents are caused by the expansibility and rarefaction of heated matter, it is a fact that electricity is an ever-present active factor, and its activity is modified and its potentiality varied with every change that occurs in the movements of the air and the ocean. Instability, then, is characteristic of electricity. It is true, further, that atmospheric electricity is always positive, and that the symbol of its power may be increased or diminished; hence its intensity is variable. But as its power is relative merely, being measured from a standard of neutrality, it appears that the less positive conditions become the more negative. Now it can be shown that positive electrification is the necessary normal condition of a healthy invigorating atmosphere, and that in the same degree that its quantity becomes diminished, or is neutralized by the accession of negative states, in the same degree does it become abnormal and devitalizing.

It is an extraordinary fact that all manifestations of life have as a condition the evolution of positive electricity. It is true, therefore, that negative states and animation are absolutely incompatible. This condition of living bodies is a relatively variable one independently of external influences. Now, if the electrical condition of living body is degraded from causes within itself, and in addition is subject to further degradation from neutralization of the atmospheric positive state, which is a source of supply independently of bodily sources, it is not easy to avoid the conclusion that these causes, one or both, operate as predisponents to morbid action. Further, the same conditions prevailing over wide areas, and through long periods of time, as they unquestionably do, we are furnished with the cause of the states of least resistance, or depression of vitality, which is so constantly an element of pestilential activity. Admitting deficiency, we must admit excess, and doing so we account for the prevalence of acute inflammatory or sthenic diseases as well.

Magnetism is classed as a modification of electricity, yet I believe the terms to be conditionally convertible; for it seems to me that they are forms of the same force operating under different circumstances, that is to say, magnetism belongs to the universe, is the bond of union between its members; while electricity belongs to the atmosphere of the earth, and to it alone. In short, electricity is mobilized magnetism. Its origin being in solar activity, and its influence including every body in our system, it is obvious that its consideration must include too much solar and planetary physics to be brought within the limits of this paper.

Notwithstanding the conflicting opinions regarding *ozone*, I am disposed to adopt that of Professor Kedzie, who says: "I call ozone the most energetic of the constituents of the atmosphere. Its presence or absence must have a controlling influence over the vital powers, and it seems to me that no one can deny that its influence on human health must be most significant." Flippant denial of its existence in a normal atmosphere is easily made, but the results of observations by men of world-wide reputation and of unimpeachable standing in the scientific world, place it beyond the reach of irresponsible denials. From among the multitude of facts concerning this agent one only is selected for this occasion, and that more for the purpose of giving it the emphasis which it deserves than to enter into a discussion upon it. Adopting the accepted definition of the action of atmospheric ozone some consideration is due to the circumstances attending its appearance and disappearance. The transformation of simple oxygen into a substance having such peculiar chemical activity takes place under the action of free atmospheric electricity. If there is little or no free electricity in the air then little or no metamorphosis of oxygen occurs. Such being the fact we are able to say pretty definitely in what conditions of the atmosphere ozone is present or otherwise. At the outset we are struck with the remarkable complementary relations existing between meteorological conditions and those which determine the presence or absence of ozone; for, whereas, in the one case there is high barometrical pressure, with cooler, purer, highly electrified air being poured down upon the earth's surface from the upper regions, bringing with it free electricity in abundance; in the other case opposite conditions prevail; a heated, attenuated, vapor-laden atmosphere at a low pressure, which has absorbed not only the free electricity, but has greatly neutralized the electrically positive state of the air, in the vaporization of the water which it contains. Under the first class of phenomena ozone is generated; under the other it is not only not generated, but that which is already present is decomposed to furnish the electrical force essential to the process of vaporization. Between these opposite states of the atmosphere lies all the difference between health and disease; for the phenomena of one side are conservative and protective, and of the other they are destructive.

It must appear, then, that with the atmosphere at or near its mean electrically positive state; with a sufficient quantity of free electricity to subserve the processes of evaporation and the generation of ozone in sufficiency to oxydize organic noxious emanations or miasmas; with an equilibrium between the positive atmosphere and the negative earth; with equalization between the sometime electro-positive antagonisms of animal life and the atmosphere; and with such relations of polarity between the animal and the earth as to preclude violence, that animal life is at its highest point of conservatism. Now every condition specified may be reversed, or any one of them ; some may operate with extreme violence, others far below the mean or not at all. Is it not apparent that with fluctuations of these mean states the vitality of every living thing has such a tax laid upon it that, instead of its powers of resistance alone being called into the account, its powers of existence are laid under contribution as well? But suppose these deleterious fluctuations extend through long periods of time, and over wide areas of the earth's surface ; must the fact be again emphasized that this is one of the prime conditions of a wide-spread epidemic state?

How to gain the information necessary to a comprehension of all these matters, their relations to each other and their relations to health and disease, becomes a practical question. There are a number of avenues which may be made available. One of these has power which covers our own country, and beyond ; it employs only skilled observers, and has in use instruments of precision and all necessary machinery for the purpose ; it publishes a certain line of occurrences and prognostications only after the strictest scientific verification ; and now does for the wealth of the nation that which it might do for its health. I refer to the signal service of the army.

Maritime and agricultural interests have outlived their days of skepticism regarding the prognostications of the weather bureau, and are reaping a harvest of benefits ; why should not we do the same in our special field? Other interests demand and demand, more and more, and their persistence is rewarded by gratification. Why should not our interests demand like consideration? Polar researches are of scientific value, but to keep beyond our boundaries cholera and yellow fever should be more so. Geological surveys are valuable, but sanitary and climatological surveys should be more so. The National Board of Health did and could do little or nothing for want of funds, while great sums are expended for observation of eclipses, fish culture, garden seeds and an official horse-doctor!

There appears but one mode of procedure to set right the disproportion indicated, and that is a dignified and temperate demand for a rightful share in the results of scientific investigations which are prosecuted at such great expenditure. The demand once granted we shall gain for our science that which may add as greatly to its certainties as what is now done adds to those of the sciences of agriculture and navigation. The Signal Service and a National Board of Health together should furnish to State boards of health, and the latter to the profession at large, the following information, in addition to what is already furnished on the subject of meteorology :

1. Changes of position, and of the relations of the planets and other heavenly bodies, and their connection, if any, with variations and fluctuations of the forces which operate on the surface of the earth.

2. Observations of all unusual celestial phenomena, such as sun-spots, eclipses, comets, meteoric showers and auroral displays, with such coincidences of dynamic irregularities upon the earth's surface as may be verified.

3. Measurements of degrees of electric tension, and magnetic oscillations, with the relations of coincidence which they bear to other phenomena.

4. Observations upon ozone, to determine the conditions which attend its appearance and disappearance, its diurnal fluctuations, its value as a health conservator, and its relations to other phenomena.

5. Records of all epidemics of disease; time, place and circumstances of accession and recession, and their relations to irregularities or unusual fluctuation of the dynamic forces.

All these phenomena depend upon laws, and I dare maintain that the laws are capable of formulation, provided the data upon which to base them are furnished, and having once risen to the height of law the corrollaries are well nigh self-determining.

COUSIN-MARRIAGES UNOBJECTIONABLE.*

BY E. S. McKEE, M. D.,
CINCINNATI, OHIO.

We find permeating all classes, all nations and all ages the belief that consanguineous marriages have a deleterious effect upon their offspring. I was led to study this subject a few years ago and my study brought me to the conclusion that there was nothing whatever in the belief. I came to the conclusion that like breeds like, good or bad, entirely independent of consanguinity. If healthy cousins marry, other things being equal, they will bear healthy children. If unhealthy cousins marry, other things being equal, they will bear unhealthy children. This same thing would result, whether the marriages were those of consanguinity or not. Evil results have undoubtedly followed consanguinity in marriage, but it is not proven that they were dependent on consanguinity. The *post hoc* is not the *propter hoc.* Counting consanguinity by two different methods has led to confusion. The civil law counts the number of generations from one individual to the common ancestor, then down to the other. The canonical law counts the degrees in only one line, the longer, from the common ancestor. The canon law is imperfect. It gives persons the same relation to a certain person when such is not the case.

Prohibiting marriage in the third degree by the canon law prohibits many more than by the civil law. The Levitical law is followed generally in the various States of this nation, but New Hampshire, Ohio and Indiana forbid the marriage of first cousins. Most States forbid a man to marry his aunt or neice, but this is allowed in New York. George H. Darwin has studied the first-cousin marriages in England thoroughly. He finds in London, comprising all classes, the cousin-marriages are about 1.5 per cent., in urban districts 2 per cent., in rural districts 2.25 per cent., among the landed gentry 3.5 per cent., aristocracy 4.5 per cent.—an average of 3 per cent. for England. The average for Scotland is 5.25 per cent. This high percentage in Scotland and other communities leads us to the conclusion that consanguineous marriages are due to a certain extent to portions of country separated from other parts by mountains, seas or other barriers to free intercourse. Religious sects and aristocratic ideas also lead to this result.

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* From remarks at Eleventh Annual Session Mississippi Valley Medical Association.

A careful search through the asylums for the insane, idiots and deaf and dumb leads to the finding that between three and four per cent. of those suffering from these troubles are the descendants of consanguineous unions. Hence we learn from statistics that about the same proportion of persons in these institutions are the descendants of consanguineous marriages as to the whole number of these unfortunates, as the number of consanguineous marriages is to the whole number of marriages. They show fertility among the consanguineous to be slightly greater than among the non-consanguineous. Sterility has been cited as one of the results of consanguinity. The claim is not borne out by statistics, as we have just seen. In fact the converse proves to be true. This fact is probably due to the reason that these marriages are most likely to occur where there are large families of cousins growing up together, and in these cases fertility is hereditary.

May not many marriages occur between relatives supposed to be non-relatives? The marriage of Jones and Jones, Brown and Brown, Smith and Smith is probably the marriage of distant relatives, though they are not themselves aware of the fact. Then, too, through illicit intercourse, could not like marriages result between relatives supposed to be not related? One writer has justly said all men are the sons of their mothers, but all *men are not sons of their fathers*. The evil results following consanguinity are probably *post hoc*, not *propter hoc*.

Dr. Withington reports 108 consanguineous marriages to the Massachusetts Medical Society. All were fertile save five. In one of these there was a mechanical impediment on the part of the wife, in another the marriage had lasted only two years. Three of these were physicians, and one a member of the Boston Tea Party, certainly very respectable members of society.

The frequency of mental disease among earls and the aristocracy is cast at the feet of consanguinity. It is probable that these occurrences are more noticed among these people than among others; and then, too, why not lay it at the door of debauchery, extravagance and corruption? The noted cases are the unfortunate ones. It is bad news that travels fast and far. The favorable ones are unknown or forgotten.

Atavism explains the fact that sometimes healthy consanguineous parents beget unhealthy children. This occurs in most hereditary troubles. Evil results remaining absent after consanguineous marriages proves that, for that case at least, consanguinity was harmless, for it was known to be present. If consanguinity is the cause, the effect should follow where the cause is present.

Consanguineous marriages which bring together persons having a disease or morbid tendency in common are dangerous to the offspring. Not one whit more than the marriage of two other persons, not related, yet having an equal amount of tendency to disease in common. Conditions present in both parents are simply augmented and the result would have been the same had they not been related. Having a malformation or disease firmly established, we have a tendency to breed true. A defect or peculiarity in a family or race or sect will naturally be propagated by intermarriage. Color-blindness is remarkably prevalent among the Jews and Quakers.

The latter are educated to abhor color. Those who admire it separate themselves from the sect and thus intensify the tendency in the remainder. The defect having crept among the Jews, is intensified and kept up by intermarriage. The same means has its effect on the Quakers.

Man is an animal, anatomically, physiologically and sexually. He is subject to the same laws of propagation. In-and-in breeding in animals is done by cunning breeders to put money in their pockets and improve their stock. Jersey cattle have been bred for the last 150 years on a small island six by eleven miles. They are not raised for beef or oxen, but they command a high price for their milk and butter. This was probably the recommendation of the first cattle on the island, and this quality has improved by in-and-in breeding.

It is ludicrous to enumerate the half a hundred abnormalities accredited to consanguinity, among the rest whooping cough. Would it be better for the offspring were consanguineous marriages subject to medical supervision? Certainly, but no better than for all marriages to be under like supervision.

We find certain factors leading to consanguineous marriages; viz., portions of country geographically isolated by mountains or seas, rendering communication with the outside world difficult; religious or political sects of an exclusive nature, and aristocratic ideas of position and wealth. As examples, note the percentage in Scotland, Martha's Vineyard, the Commune of Batz, and among the Jews and Quakers.

The facts deduced by a careful study of the subject, do not warrant us in supposing that there is a specific degenerative effect caused *ipso facto* by consanguinity, and these marriages, no other objection being present, should not be opposed on physiological grounds.

DENTAL HYGIENE.*

BY WM. H. SHIPPS, M.D.,
Of Bordentown, N. J.

It is surprising, though nevertheless a fact, that among all grades of society, not excluding the more intelligent classes, there exists a woeful ignorance or indifference as regards the proper care and attention of the teeth. This neglect of the teeth is so flagrant that children are allowed to pass through the several stages of infancy, childhood and youth, without the first hint at the means necessary for the preservation of these most important organs, and only after such unmistakable warnings as an aching tooth, ulcerated gums, foul breath, and other equally apparent and oftentimes graver symptoms, are they awakened to a knowledge of the true condition of affairs. Then if a mistaken sympathy does not get the better of the indulgent parents, the child is hustled off to the nearest dentist, with the hope and expectation that he, in a few moments, can remedy the destructive influences of months and years. They are therefore unprepared for the somewhat depressing intelligence, that this molar, and that bicuspid, must come out, and that this, that and the other tooth, must be filled at once, if perchance they may possibly be saved at all. Medical men of to-day appreciate as they never did before, the very intimate relations existing between the teeth and the entire physical organization. The ill effects following the irritation excited by decayed or diseased teeth upon the nervous system more especially, and upon the health in general, is now so thoroughly recognized by every intelligent physician, that in almost all instances when called to examine a patient, the condition of the teeth is carefully inquired into as a possible cause of disease.

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* Lecture delivered at Bordentown Female College, January, 1888.

Decayed teeth afford convenient hiding places for the arrest and lodgement of animal and vegetable matters, which, if undisturbed, decompose and give rise to most offensive gases; these putrefying gases, breathed and rebreathed as they must be, cannot but prove hurtful to the system, acting as they must in the same manner as the polluted atmosphere of a habitation. I know some individuals who are enthusiasts on the subject of a pure breathing medium, who unconsciously are constantly taking into their lungs the most injurious kinds of atmospheric impurities such as I have just described to you.

I have had repeatedly come to my office, individuals suffering from disorordered digestion, neuralgia or nervous irritability, whose whole trouble was nothing more nor less than a neglected condition of the teeth. In some instances I have dismissed them with no other prescription, save a recommendation to at once consult a competent dentist and have the cause of the difficulty removed. In the course of a few weeks they have come back to me reporting entire recovery.

Man has two sets of teeth, a temporary and a permanent set. The temporary or milk teeth as they are called, twenty in number, are the teeth of infancy and childhood. The permanent teeth, thirty-two in number, are the teeth of youth and adult life. The temporary teeth first make their appearance about the seventh month, and the last about the beginning of the third year. They are divided into four incisors, two cuspids and four molars in each jaw. The permanent set consist of thirty-two teeth, sixteen in each jaw, divided as follows: four incisors, two cuspids, four bi-cuspids, and six molars. The incisors situated in front of the jaws are double wedge shaped, their office is to seize or bite the food. The cuspids are more pointed than the incisors, their function is to tear and lacerate the food; these teeth, but rudimentary in man, are largely developed in the carnivora or flesh feeding animals, such as the lion, bear or tiger, etc.

The bi-cuspids are smaller and shorter than the cuspids, and usually have but a single root.

The molars, the largest of the permanent set, have a broad grooved surface, more marked in the lower than upper jaw; they are specially adapted for grinding or crushing the food. In the herbivora or grain-eating animals, they are largely developed.

The teeth are liable to disease at a very early date, even at or shortly after birth; constitutional causes may so interfere with the growth and development of the various constituents of the teeth, as to render them soft or brittle, and but poorly calculated to resist the wear and tear to which they are subject. This fact many parents ignore, from an erroneous idea that the temporary teeth of infancy and early childhood are doomed from the start to speedy decay and destruction, hence when decay makes its appearance nothing is done to retard the destructive process. Sooner or later the child's mouth presents the unsightly appearance so familiar to us all, due more frequently to ignorance or neglect than a want of vitality in the teeth. Later in life, when the temporary set is forced to give way to the permanent teeth instead of making their approach upon healthy and well-nourished structures, they are too often surrounded by unhealthy or diseased tissues. The rule should be to watch the temporary teeth most carefully, and whenever practicable, have them promptly filled or otherwise cared for. In childhood, as well as in adult life, ulceration of the tongue, gums and cheeks is of frequent occurrence, caused by a want of cleanliness or inattention to the teeth. Disorders of the digestive and nervous systems can often be traced to some abnormal condition of the organs of mastication. In fact maliguant disease of the tongue has been known to be produced by the irritation caused by contact with the jagged end of a tooth.

Dental hygiene or the care of the teeth, includes not only the adoption of such means as will insure perfect cleanliness of the mouth and the organs contained therein, but also the prevention of fermentation, whether arising from stomachic disorders or as a result of the accumulation of particles of food in the crevices or interstices of the teeth. Probably the most frequent cause of dental decay is the so-called acid fermentation, resulting from food decomposition. This latter takes place through the agency of heat and moisture acting upon the particles of animal and vegetable matters lodged in or about the teeth. As a result of this decomposition, there is developed a minute vegetable parasite, to which microscopists have given the name of "Septothric Bucólis." This parasite is found in almost all forms of decayed teeth, and not infrequently in the deposits of soft tartar that collect upon both sound and diseased teeth. Despite the hardness and durability of the enamel, sooner or later it will yield to most acids, and particularly is this the case with the acids generated by decomposed food. When the cause of decay originates in some disorder of digestion, the digestive organs should be the point of attack, and by means of proper remedies, aided by attention to diet, the trouble may in most instances be speedily gotten rid of. When, however, the disease is limited to the mouth, other means such as I shall presently suggest, will be in order. Whatever the cause of decay, the most scrupulous care should be taken with the toilet of the teeth. After eating, the teeth and mouth should be well rinsed with slightly warm water, or water from which the chill has been taken; this water may be ordinary unmedicated water, or water to which a few drops of ammonia, tincture of myrrh, or a small quantity of lime water is added, the proportion of the latter being about a teaspoonful to a wine glassful of water. In addition, a soft rag or moderately stiff brush should be used. One important point to remember in the selection of a brush is to get one with bristles of uneven length, so that not even the smallest particle of food will escape detection. Not only should the front of the teeth be brushed, but the back portions should be equally cared for. The use of tooth-picks of wood or other nonmetallic substance is not only allowable but recommended, but all metal should be discarded as likely to harm the enamel. I would especially advise against the use of patent tooth washes or powders about whose composition you are ignorant. Many of these preparations contain substances positively injurious to the enamel, and for this reason the only safe rule is to avoid them all. Finely powdered chalk, and orris root make a very agreeable and efficient powder. A tooth-powder I know to be good and safe, is one I have used with advantage, and because it seems to combine all that a tooth-powder should possess, being cleansing, tonic and antiseptic, I prefer it to anything with which I am acquainted. The formula is as follows :

Powdered Borax,	40	grains.
" Chlorate of Potash,	30	"
" Chalk,	60	"
" Guaiac,	10	"
Menthol,	10	"
Ol. Gaultheria,	5	drops.

So much then for washes and powders ; these, if carefully and regularly used, will do much to prevent decay of the teeth.

Now, a word as to diet and its effects upon the teeth. Acids, if taken in any quantity or for any length of time, act injuriously upon the enamel. A popular notion exists in the minds of many that the use of sweetmeats, confectionery and the like is objectionable on the ground of some specific action upon the teeth. Aside from a greater tendency to promote fermentative changes in the particles of food, which can readily be overcome by the means suggested, I see no reason why sugar should be excluded from our dietary. Certain drugs, containing mineral acids, as for instance, the much used Tincture of the Chloride of Iron, should be taken well diluted through a glass tube, so as to avoid direct contact with the teeth.

Hot and cold drinks act injuriously upon the enamel, oftentimes causing it to crack and subsequently break. The avoidance of very hot or very cold drinks cannot be too earnestly insisted upon. Another safe rule as regards the hygiene of the teeth, is to place yourselves under the care of a competent dentist, and, mind you, I mean one skilled in his business, who can tell when a tooth should remain undisturbed or when it should be sacrificed ; this amount of knowledge you might suppose any one qualified to possess, but my experience leads me to believe that frequently teeth are removed that could be saved for years of comfort and service to the owner simply because of ignorance or indifference on the part of the dentist. Let the dentist who is to take charge of you inspect the mouth and teeth at least twice yearly—in this way he will be able to anticipate the first approach of decay or disease, and take such measures as are calculated to prevent its further headway.

An incrustation, known as tartar, from a fancied resemblance to the deposits found on the casks in the process of wine making, frequently attaches itself to the teeth, acting both as a disfigurement and source of disease. This is nothing more or less than a deposit of phosphate of lime, mucus and saliva, that quickly forms unless the greatest fidelity is observed in thoroughly cleansing the teeth. Tartar makes its appearance in one of the several forms, either as hard black, brown, or yellowish deposits, collecting on the sides or body of the teeth, or as a soft, cheesy-like substance, of a yellowish hue, whose favorite haunts are in the neighborhood of the neck and exposed portions of the roots of the teeth ; then, again, it appears simply as a stain or discoloration. Whatever the nature of the deposit, it does harm, besides destroying the beauty of the teeth. Some of these deposits appear to act mechanically, by producing irritation of the gums and adjacent structures ; others, again, act directly upon the enamel, causing speedy decay. The largest deposits of tartar are usually found at the outlets of the salivary ducts. On account of the tendency of the fluids of the mouth to gravitate downwards the teeth of the lower jaw are more likely to be attacked than the upper. In the soft variety of tartar we often have as an accompaniment fetor of the breath, which at times is highly offensive. Foul breath, however, may arise from other causes—it may be due to accumulations of small particles of food, which, if undisturbed, collect between the teeth, and in a short time decompose ; it may also be produced by rotten or decayed teeth, by the action of certain drugs and other causes. Dr. Joseph Howe, the author of an excellent work called "The Breath," speaking upon this very subject, says, "During the process of mastication, many particles of food become lodged in the minute cavities of the teeth. The heat and moisture of the mouth excite decomposition in the mass. The animal matters it contains, as well as the alkaline salts, assist in continuing the destructive process. In a day or two it is thoroughly rotten and emits the foulness characteristic of putridity under other circumstances. Thus each decaying tooth becomes the receptacle and storehouse for decaying animal matter in the most disgusting forms. The portions of decaying material near the carious cavity become condensed and fastened into the crevices of the tooth. Daily the rotten mass receives fresh layers, which form on the top, until it is very difficult to distinguish the animal matter from the bone. As a necessary consequence of this putrefactive change, the breath becomes impregnated with foulness, so that it is almost impossible to remain in close proximity to the patient. The odor is worse than most other varieties, but it is soon relieved by appropriate remedies. The preventive treatment is perfect cleanliness and the employment of the means already mentioned. The curative treatment which comes into play after the mischief has begun, is to remove the deposits formed and stay the further progress of decay. Now, the proper course is to consult a dentist and have him remove the collections for you. But suppose decay has already set in, what then ? Why, if at all possible, if the destructive process has not advanced too far, have the teeth filled by all means, always remembering that no artificial teeth can ever satisfactorily compensate for those you are obliged to part company with. When, however, there is no alternative left you but a resort to art, choose as a setting either gold, silver, platinum or dark rubber. As a rule the metal settings or plates are most agreeable, and not apt to impart any of the unpleasant taste sometimes experienced by those who use any of the cheaper compositions. Speaking of cheapness, beware of him of high-sounding title, who advertises to furnish you with teeth while you wait, at price only slightly in advance of what you would pay an honest dentist for filling a single tooth. Cheap dentists, like cheap doctors, early learn the value of their services, and charge for them accordingly,—a fact that after a while becomes painfully realistic to their unfortunate patients. Another point to bear in mind, do not accept a set of teeth unless it fits you accurately. A poorly fitting set of teeth is an abomination, and not unfrequently active in producing serious irritation of the structure of the mouth.

THE HYGIENE OF THE NOSE AND THROAT.

BY DR. CARL SEILER,

Instructor in Laryngology and Lecturer on Diseases of the Throat and Nose, at the University of Pennsylvania.

(Continued from page 430.)

The conditions described in the last number of the ANNALS, as affecting the nose and throat are in most cases produced by what is termed catching cold, and persons who have had the misfortune to be suffering from a cold are very particular in pointing out the time and place at which they took the cold. Unfortunately it is not enough to know when and where we took cold, in order to avoid a repetition of the accident, but we must also know the reason why we took cold at that particular moment and under those particular circumstances so that an examination of the mechanism of catching cold will not be out of place.

It is a well-known fact that the human organism must be maintained under all circumstances at a temperature equal to 98° Fahr., otherwise disease will result, and that the source of this heat is within the organism, the expenditure of which by radiation we endeavor to minimize by living in houses and by protecting the surface of the body with clothes.

The first part of this proposition is an accepted fact and self-evident, while the second needs some further explanation.

Heat is produced in the animal organism in two ways: first, by oxidation of food, and second, by the conversion of muscular movement into heat, according to the now well-established law of the correlation of forces. How and where this oxidation of food takes place I will not here enter into, but will state that certain articles of food yield a larger amount of heat than others. Thus animal food, and especially animal fats and oils, produce more heat when introduced into the system than farinaceous food and fruits do. This we find exemplified in contrasting the mode of living of the Esquimau and other inhabitants of the north with those dwelling in the tropics.

The Esquimau lives almost exclusively on animal food and fish oil, while the South-sea Islander, who lives most of the time in an atmosphere the temperature of which is higher than the normal temperature of his body, eats chiefly fruits and vegetables. And even in temperate climates, where man lives both on vegetable and animal food, more of the former is consumed during the warm season, while the latter is in preponderance during the cold winter months. The Catholic church has long ago recognized this fact, and has introduced the lenten season, a period of abstinence from animal food, at a time of the year when the seasons change from the cold to the warm, for if more heat-producing food is taken into the system than is required to keep the body at the normal temperature, the digestive system is taxed beyond its capacity, the blood is overcharged with effete material, which is not eliminated quickly enough, and as a result, we feel out of health, which, when it occurs during the first warm days of spring, we call spring fever. The same effect is produced when we change our abode from the North to the South during the winter months, and persist in the same mode of living, and take the same amount of animal food ; and if we continue to live this way for a length of time, the result is congestion, and may be abscess of the liver. This is exemplified by the fate of so many Englishmen who go to India, where they eat their roast beef and drink their heavy ales, as they have done in England, but who in a few years have to return with a diseased liver, blaming the climate when they should blame themselves.

In order to oxidize the food, oxygen must be introduced into the system in sufficient quantity, through the lungs, otherwise part of the food only is burnt up and produces heat, while the rest is thrown out again as waste material, and by its presence materially interferes with normal action of the different organs.

Muscular exercise, as is well known, produces heat within the system by a conversion of motion into heat, but this motion depends for its sustenance upon the contractile force of the muscles, which is kept up by part of the food taken into the system. If this contractile force of the muscles is not exercised, it needs not as much nourishment, and the surplus is deposited as fat within and around the different organs. This is exemplified by the fact that in order to fatten an animal, it is kept confined within a narrow space and is overfed.

There can be no doubt that sunlight plays an important part in the oxidation of food within the system, and this is probably one reason why night air is generally supposed to be injurious to delicate constitutions.

This heat, which is generated within the body by oxidation of food and by muscular movement, would be lost by radiation if the temperature of the atmosphere surrounding the body was far below the normal temperature of the system, and, therefore, this loss must be minimized by interposing between the integuments of the body and the air non-conductors of heat, in the shape of clothing, not to keep the cold out, but to keep the heat in. The face, part of the neck, and the hands are, however, generally exposed, and thereby the epidermis becomes hard and horny, thus becoming a bad conductor of heat, and very little of the systemic warmth is lost by radiation from these parts.

The hygrometric condition of the atmosphere, irrespective of temperature, has a great deal to do with the temperature of the body, at least as far as individual sensation is concerned. We feel more chilly in a cold, damp atmosphere than in a dry one of the same temperature, and we can endure a greater amount of heat when the air is dry than when it is filled with aqueous vapor. As far as I know, this fact has not, as yet, been satisfactorily explained, and I would suggest, as a reason, that the moisture is absorbed by the skin, thus making it a better conductor of heat and facilitating the ingress and egress of heat through it.

We also minimize the expenditure of animal heat by living the greater part of our time (in cities, at least) in houses and apartments from which the outer air is excluded as much as possible, and the atmosphere of which during the cold season, is artificially heated.

The maintenance of the normal temperature of the body, therefore, depends upon the production of heat by oxidation of food within the system, by muscular exercise, and upon the prevention, or at least reduction, of the radiation ; and a lowering of this temperature, especially if it be sudden, causes contraction of the capillaries in the outer integuments, a disturbance of the hearts action, and a congestion of some of the internal organs, and particularly of the mucous membrane of the respiratory tract.

Taking it for granted that at a given moment there is a certain quantity of blood in the body which is distributed throughout the vascular system, a greater amount of blood than is normal will accumulate in some portion of the system when a contraction of the capillaries in an area of the surface takes place. Such an accumulation causes an over-distention of the capillaries, and consequently a congestion of the part. As examples of this may be cited the facts that deep-seated inflammations, or congestions, are relieved by counter-irritation of the skin, and it is by no means necessary to apply the counter-irritant directly over the organ affected to obtain the desired result ; and also, that frequently inflammation. and even ulceration, of the bowels is a result of extensive burns and scalds of the skin of the chest or abdomen. In this latter case the capillaries of the skin are violently contracted and the blood driven to other parts of the body, and especially to the intestines, causing a congestion, followed by inflammation of their mucous membrane.

In connection with, and perhaps caused by, this contraction of the capillaries of the skin by cold there is always an irritation of the distal nerve ends, which, by reflex action, produces a change of the heart's action, which in turn becomes a factor in the production of the congestion in other portions of the body.

The blush of shame is produced by reflex nervous action, the cause of which, however, is central and not peripheral, and not unfrequently congestion of the lungs is produced by violent or long-continued emotional disturbances. The reason why the mucous membrane of the respiratory tract is more liable to be the seat of this congestion than any other portion of the body, must be looked for in the fact that it, among civilized nations, is hardly ever free from irritation in one or the other portion of its extent. We constantly inhale particles of vegetable and mineral substances in the shape of dust, which by engaging the cilia of the epithelium, act as irritants. This, together with the impure air surcharged with carbonic acid which we breathe in the confined atmosphere of our dwellings and public halls, produces a want of tone in the mucous membrane of the respiratory tract and its capillaries, thus predisposing it to congestion. For, as all fluids, so will the blood in the body when pressed upon at any particular point, seek an outlet at the point of least resistance—in this instance, the capillaries of the mucous membrane ot the nose, pharynx, trachea, and lungs. Catching cold may then be defined as a momentary lowering of the temperature of the body by external influences, which causes both directly and indirectly an uneven distribution of the blood and thereby a congestion or inflammation of internal organs.

Here the question may be raised: Why is it that some persons are more liable to catch cold than others, who, perhaps, are more exposed to cold and the inclemency of the weather?

In order to answer this question I must state that the power of producing heat in the system may be weakened by a number of causes, and that when thus weakened it is not able to produce an extra amount of heat when demand for it is made by exposure to a lower temperature. Thus we find that a person who leads a sedentary life and confines himself in an atmosphere artificially heated to from 75° to 80° Fahr., accustoms his system to habitually produce little heat, because little demand is made for it; or one whose digestive apparatus is out of order will not properly digest his food, and can not, therefore, produce sufficient heat by oxidation of the food; or one who is deprived, voluntarily or involuntarily, of the necessary amount of oxygen, be it by being confined in close rooms or on account of disease of the lungs; or finally one who does not take exercise, and so does not produce heat by muscular motion, will easily take cold from the slightest exposure. While on the other hand, a person who lives an out-of-door life, and thus exercises his heat-producing faculty, takes cold but rarely, even when much exposed.

To prevent taking cold, therefore, a person should take outdoor exercise at all seasons and in all kinds of weather, should not dress too warmly, should have plenty of fresh air in his house and especially in his bedrooms, and should not heat the air in his rooms above 68 or 70° Fahr.

MEDIÆVAL HYGIENE.—Though but scant recognition was awarded to the science of hygiene in the middle ages, we yet find ample evidence that infringement of its laws then as now, was followed by swift punishment. From the *London News* we learn that a letter written by Anne Boleyn about three and a half centuries ago has just been published. It was on the occasion of her first visit to London, and the writer describes, among other things, the unfavorable effects produced in her case by the late hours and dissipations of the capital in the early part of the reign of Henry VIII. She writes: "We rise so late in the morning—seldom before 6 o'clock—and sit up so late at night—being scarcely in bed before 10—that I am quite sick of it. The irregular life which I have led since I came to this place has quite destroyed my appetite." She then proceeds to mention a little detail which illustrates the ideas of the Lady Anne Boleyn and her cotemporaries as to what was a normal appetite in a healthy Englishwoman at that period.

"You know," she writes to her correspondent, "I could manage one pound of bacon and a tankard of good ale for my breakfast in the country, but in London I find it difficult to get through half that quanity."

ZOLA'S REMEDY FOR VICE.—"If you ask me what remedy I would propose for the vice which is inevitable in all countries and in all states of society, I reply," says Zola, "I believe rather in drawing men toward good than in shutting them out from bad. Arbitrary repression always fails, and it generally aggravates the evil it would suppress."

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EDITORIAL.

OURSELVES.

The new dress in which we present ourselves to our readers this month and the very valuable material which we cover with this dress are but slight forerunners of the programme of steady and great improvement in the journal which we have mapped out for the coming year. With the next issue "THE ANNALS" will commence its fourth volume an established and permanent success. When we started this journal our ideal was high, but like all substantial successes we began with small beginnings and have worked slowly, persistently and gradually upwards towards the ideal we had in mind. We have now attained that secure position which warrants us in making still greater strides towards our ideal, and we have therefore mapped out a course for the coming year that will, by comparison, make our three former volumes comparatively insignificant. Our plans are completed, and their execution will entail very heavy expense. But we are perfectly justified in incurring this expense if our friends will *promptly* pay their subscriptions. Nearly all subscriptions expire with this issue and we would be greatly aided in our work if all our friends would promptly enclose the amount for next year, whereby we would be saved the expense of sending out bills, an item of expense of no small magnitude. We promise you very full value for your money during the coming year. Let each one who reads this journal make it easy for us to redeem the promise by sending in their subscriptions at once. There is nothing that the average man overlooks more readily than the subscription to a journal, but let this year be an exception ; deluge us with your subscriptions and, we, in turn, will deluge you monthly for a year to come with the most valuable and practically useful information.

HEALTHY RELAXATION.—Mr. Blaine said last summer : "I have learned what real relaxation means. It is to become so interested in trifles that they become the most important events in life." Andrew Carnegie says he thinks a good laugh is always in order, and his success in life is partly due to the fact that troubles have as little effect on him as "water on a duck's back." Chauncey M. Depew's whole life is an illustration of how to laugh and prosper, and the lesson of all those brilliant examples is fitly capped by the advice of Shakespeare—"Wear your troubles as your garments, on the outside, carelessly."

NOTES AND COMMENTS.

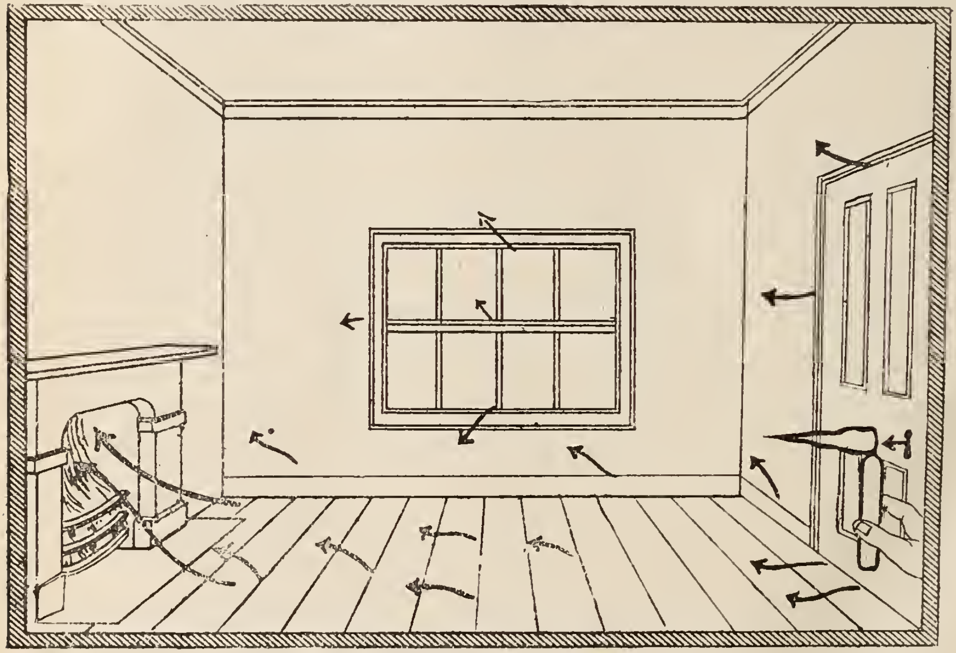
A Health Bureau.—On the 4th of December Senator Gibson introduced a bill in the United States Senate for the establishment in the Interior Department of a Bureau of Health, to be under the direction of a Commissioner, who shall receive an annual salary of $5,000. It also provides for the appointment by the President of a Health Commission, to be composed of twenty members, who shall be divided into six sections, as follows:

Five for the yellow fever section, three each for the cholera, typhoid fever, scarlet fever, small-pox and diphtheria sections. Each member of the commission shall receive an annual salary of $1,200, and it shall be his duty to investigate the cause, origin and best mode of prevention of the diseases mentioned. Five members of the commission shall be organized into a quarantine commission, whose duty it shall be to examine into and report upon the efficacy of the quarantine at the various seaports of the United States. Upon the report of the commission to the Health Commissioner that the quarantine service at any port is inefficient the commissioner is commanded to direct the Collector of Customs at the port to refuse entry to any vessels, goods or persons coming from any infected place unless the vessel shall have undergone quarantine at some national quarantine station. The Health Commissioner is directed whenever called upon by the Governor of a State to make rules and regulations and take measures for the suppression of any infectious disease. It is made the duty of consular officers to make weekly reports to the Health Commissioner in regard to the sanitary condition of foreign ports. It is made unlawful for any person to obstruct commerce between the States, or with any foreign country, except in accordance with the rules prescribed by the Health Commissioner. An appropriation of $75,000 is made for the expenses of the bureau annually, and an appropriation of $300,000 is made to be drawn upon whenever necessary for the suppression of any contagious or infectious disease.

Hygiene of the Monthly Sickness.—Elsewhere in this issue we publish the statement of a physician that very few American women are typically healthy. And when we ask the meaning of such a statement, we find that there are very few women whose sexual organs are not more or less out of gear. This is a lamentable truth, but truth it is. A volume might be written on this subject, without exhausting it, but only a few words can here be given to it. The monthly sickness is a natural phenomenon, it is true, but the outward show is an index of wonderful and marvellous changes going on within, changes that, under certain conditions, inaugurate the life of a new human being, changes so mysterious and so sublimely incomprehensible that one is lost in amazement at their contemplation. It is the custom in this country for our women to take no special note of this period, to go about their usual pursuits as at other times. While this may be the proper thing in those cases where the function is so normally performed that nothing save the flow of blood makes the woman conscious of its existence, we are satisfied that it is not the proper procedure in that very large majority of cases, where more or less nervous disturbance gives evidence that this function is somewhat out of order. The system is peculiarly susceptible at this period and it must be carefully guarded. If one has backache, headache, if she is "nervous," if she has dyspepsia, if the feet and hands are cold, if the flow of blood is very great or if, in a word, there is any ill-feeling whatsoever, we most emphatically say that the first day of the period should be passed in bed and during the remainder of the time all exertion should be avoided. This is the time to loll about and read. Remember that if the flow of blood is excessive it is draining away that which gives you strength and this loss must be made up by plenty of good beef-steak and roast beef, while the demands on your lessened strength must be reduced.

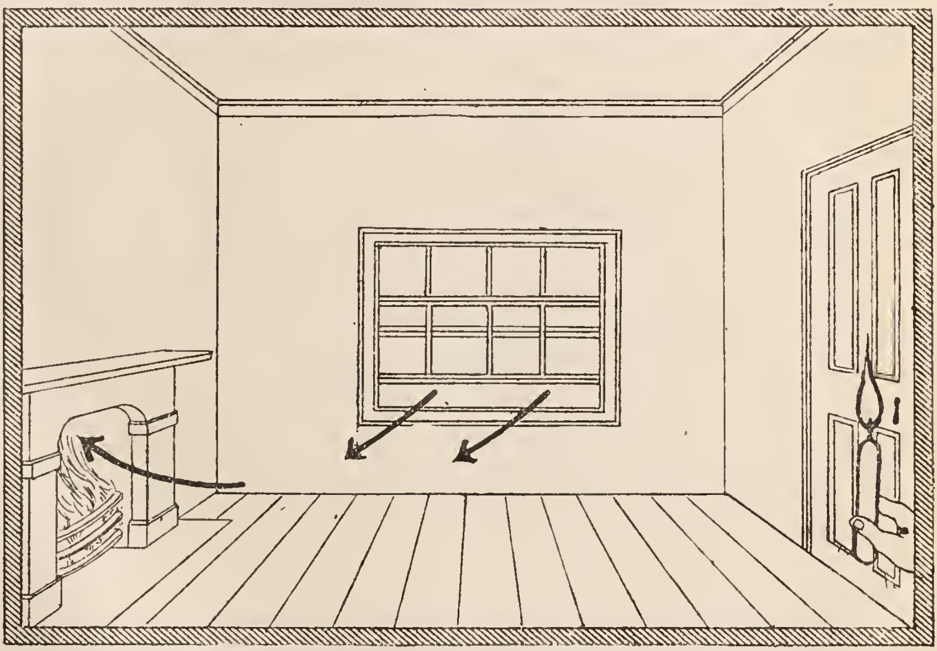
IF WATER CONTAINING LEAD is passed through a filter of phosphate of lime the lead is completely removed as an insoluble phosphate. A filter of animal charcoal can be used advantageously for this purpose, since it consists largely of calcium phosphate.—*National Bottlers' Gazette.*

A LESSON IN VENTILATION.—The accompaying drawings (from *Teale's Dangers to Health*), well demonstrates to us the importance of providing some artificial means of ventilation. In the first picture we see an open fire creating a draught up the chimney, which constantly draws the air out of the room. Well, since we know that nature abhors a vacuum, we can understand that air must be sucked in through all possible cracks and crevices to supply the place of that which is being drawn away by the chimney. We can see by the arrows how the air is drawn in through the cracks in the window, around the door and through the keyhole, and as we see it circula-



"A." Window shut. Flame at the keyhole horizontal.

ting over the floor, we can readily comprehend how almost impossible it will be to avoid draughts, and we can now understand how many a hitherto *mysterious* cold has "been caught." The second illustration shows us how, when we open the window a trifle, we can tell just what direction the currents of air are taking, so that it becomes a comparatively easy matter to avoid them. An old, but efficient plan is to raise the window about four inches, and place a board four inches wide under the lower sash; thus the air can enter between the lower and upper sashes without making a direct blast upon any one.



"B." Window open. Flame at the keyhole in repose.

BAD PLUMBING CONDEMNED.—A short time ago a crusade against bad plumbing was begun by the Board of Health of our city, when a number of plumbers were indicted for evading the act of 1885 requiring plumbers to file their plans with the Board of Health before beginning work and to give notice to the same authorities for inspection on completion of the work. Recently one of the indicted plumbers pleaded guilty in the old Court House and was fined $50. In administering the fine, the Judge said:

> "The act of 1885 is one of the most beneficial statutes, relating, as it does, to the health of this, a great and growing city, that the Legislature has passed for many years. This is the first prosecution under the act that has come to my notice, and while I don't feel disposed to act with severity toward the defendant this time, it may not be inferred that future violations of this law will not be punished to the full extent of the statute. The maximum punishment is a fine of $100 and an imprisonment of one year, and it may save the plumbers of this city some trouble, at least some of them, if they take notice that in the future this law will be rigidly enforced, and if they are brought before the court for violating it they may expect to receive a punishment which is proportionate in some degree to the serious-

ness of their offense, because it is an offense which involves in the violation or may involve the lives of many people.

"It is of the first importance as regards the public health that the law be enforced, and the plumbers before they proceed to submit their plans to the Board of Health, and particularly after their work is done, they shall notify the Board of Health in order that an inspection can be made. In that way only can the law be enforced and the health of the city preserved."

SHALL WE DANCE.—Dr. Alva H. Doby says that a typically healthy woman can dance with impunity, just as she can ride a horse or play tennis, but, he adds, comparatively few American women are typically healthy. Moreover, a woman in a ball dress is almost invariably laced too tightly, and he never knew a woman who danced who did not dance too much.

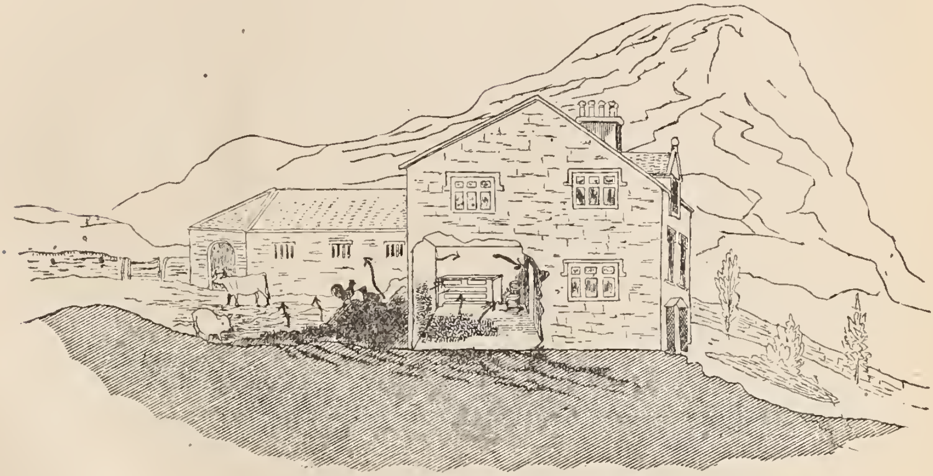
CHILDREN'S BOWELS.—As one cannot have a bright, cheerful, heat giving fire in a stove that is choked with ashes, so neither can we have bright, buoyant, healthy life in a human body that is choked with human ashes, or, in other words, where the bowels are filled with foul matter that should be evacuated therefrom. We believe that there is no one more universal cause of ill health than constipation and in an especial manner is this true with children. They are so full of play that no thought is given to anything else, and they will not take time to heed the "calls of nature." Regularity is an important rule in everything, but it is particularly so with the bowels. If we cultivate the habit of daily evacuation, the desire will be daily manifest, but if we neglect the call, the ability to evacuate, will, for the time being, pass away, and repeated repetition of this neglect will eventuate in a confirmed habit of constipation. How many of our readers know whether their children have daily evacuations? Very few, we imagine. Let us suggest this simple procedure. When you all sit around the breakfast table, let each one drink three-fourths of a glass of cold water, after breakfast is swallowed drink the remaining fourth and in a few minutes seek the water closet and without straining, wait until an evacuation occurs. Cultivate the habit and the desire will be manifest every day at the same hour. Teach your children that it is just as important to empty the bowels as it is to fill the stomach.

OUR LEGISLATORS AND OUR BOARD. Commenting on the conservatism that has been displayed by past legislators towards our Board, the *Press* says:

"Diphtheria for the next four months will be scourging the unprotected towns and villages of this great State, whose Legislature has thus far refused to give adequate power to the State Health Board to deal with this and other communicable diseases. What can be done in checking diphtheria by isolation and disinfection has just been shown in Dr. Henry B. Baker's report for Michigan, where a comparison between the cases where these precautions were taken and those in which they were not shows a saving of 1079 lives and 4692 cases. This State yearly loses at least 5000 lives and suffers the harm done by fully 20,000 preventable cases of diphtheria for lack of efficient precautions against this disease, and these figures are well within the facts as known and accepted by very competent authority. Who is responsible? You are, among others, for not sending better men to Harrisburg."

The *Press* is right when it says that the people are responsible for this state of affairs, but we think it is wrong when it reflects on the class of men who are sent to Harrisburg. If the people will make it known to their representatives that liberal legislation to the State Board of Health will meet their approval, such legislation will inevitably follow. The trouble in the past has been that our legislators have felt that the subject was not a popular one and that their constituents would not endorse any great liberality on their part in this direction.

MANURE HEAPS AGAINST HOUSE WALLS.—How familiar this picture,



from Teale's "Dangers to Health," must be to those who drive about the country, among the homes of our farmers. See how the liquid from this manure heap penetrates into the soil under the house, and then you will understand one of the reasons why the farmers are not a very healthy class, while they have all the natural conditions for health constantly surrounding them.

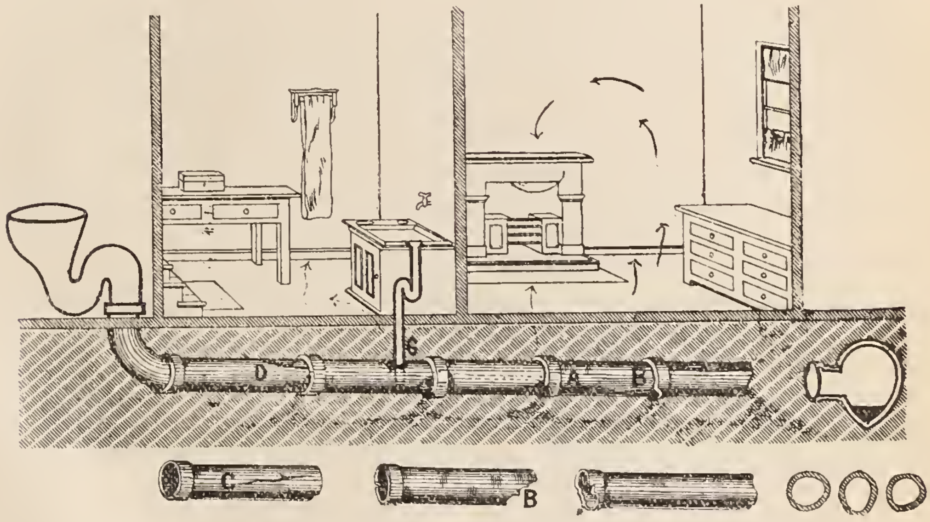
A MERRY HEART DOETH GOOD LIKE A MEDICINE.—The cheerful man or woman is infinitely less likely to succumb to disease and infection than the discontented and unhappy. When we found a soldier in the general hospital during the war, discontented and homesick, we made no delay in getting him a furlough, well assured from previous observation that few under such conditions would recover. On the other hand, no sickness was so threatening and no wound so severe but that we had hope of his recovery when we found him plucky, cheerful and hopeful. We fear that too few physicians and attendants upon the sick—too few parents and children and neighbors—are well enough versed in psychology. Of all the misfortunes that befall the sick, none is greater than the visitations of a long-and-sad-visaged physician or clergyman. One of the greatest blessings of the Christian religion is that it imparts to its sincere possessor a contentment with the present and a hopefulness of the future, a cheerfulness and happiness, that not only preserve health in the individual, but exert a healthful influence on others.—*Bulletin of the Iowa Board of Health.*

WHEN TO BATHE?—This question has been frequently asked and the replies have been varied. We feel that in winter the time to bathe is just before retiring for the night. A warm bath at this time will tend towards securing good sleep and there will be no risk of "taking cold." A warm bath will open the pores of the skin, and if this is done upon rising in the morning, and we go out after breakfast, the cold will be very apt to suddenly contract these pores, no matter how warmly we may be dressed. This sudden contraction will react injuriously upon the internal organs and may ultimately result in serious disease. This, we believe, will be the case with the vigorous as well as with the feeble individual, only the former will not at the time experience so much discomfort as the latter, and it may be longer before his vital organs suffer, but the effect will be the same in both cases. But how about the cold bath? We do not think that any one ought to take a really cold bath. The warm bath will be much more cleansing and, we believe, much more healthy. Therefore, let us establish the custom of a warm bath the last thing before retiring at night, but if this be impossible, at least do not venture out into the cold for at least three hours after bathing.

HIGHLAND VS. LOWLAND. — The impression is abroad in the world to-day that *high* land is healthy land, and low land is condemned for human habitations. This erroneous idea is based upon the supposition that all high land is well drained, but such is not invariably the case. We may and do have stagnant water, containing organic matter undergoing decomposition on the summit of the Allegheny mountains, and such a location would be an unhealthy one, while in the lowest valley, we may, and do have areas perfectly dry and well drained, localities where that which having once lived and died, is returned naturally to the soil from which it came, localities where there is no unnatural interference with the cycle of natural laws, where there are no marshes or stagnant ponds and such localities are perfectly healthy. Let us get this idea correctly into our heads; elevation, of itself, is not a guarantee of salubrity; the immediate surroundings are what we must take into consideration; malaria may be found on the mountain top and it may be absent from the valley at the foot of this same mountain.

CONQUER THE "BLUES."—Mental depression is often the result of want of brains. A man or a woman has not intelligence enough to take a just view of the situation, and to be content with the lot assigned by circumstances. There is no reason whatever why a man should not try to improve his position and means. But let him do it calmly, patiently, hopefully, intelligently. Do not let him rush at life like a mad bull at a closed gate, and resolved to be through or over at all risks. Any blockhead can treat life that way. The man of intelligence, capacity and conviction can wait as well as work; and if success equals his expectation he will be pleased, but not delirious with pride and joy. If, on the other hand, the "sequestered vale of life" be now and always his portion, he is able to take the just measure of all worldly successes and to be satisfied and pleased with his own modest share. The temper of mind inculcated by a reasonable Christianity and by an intelligent Judaism as well, is of great value as a medicinal agent.

Terra-Cotta Drains.—We have had considerable to say lately against the use of terra-cotta drain pipes and we are now glad to be able to demonstrate to the eye what we have said to the ear, by the aid of this drawing from *Teale's* "*Dangers to Health.*" Here we have terra-cotta pipes broken before they are used even, and we have also a drain made of terra cotta, that has been broken and splintered until the soil beneath is thoroughly saturated with sewage. Don't use terra-cotta.



Drain made of "Seconds." Manslaughter under an "alias."

Homiculture.—A writer in the *Nineteenth Century*, taking the cue of the impulse to discuss human culture, makes some suggestions under the heading "Homiculture." He believes a good deal could be done by directing public attention to the laws that underlie the improvement of stock. He also urges that before a marriage permit is allowed parties should be compelled to submit to a medical examination, to show that they are not laboring under hereditary diseases. Beyond this he would have the absolute prohibition of habitual criminals from propagating their kind. These suggestions have been to some degree urged before by Dugdale, but they are timely. No question is of more importance than the improvement of humanity. We have traced our ills to heredity. Our remedies must correspond. Probably all suggestions at present will be crude and premature, but il it nonsense to suppose an evil exists without a possible cure.

Franklin's Air-Bath.—This most healthy practice, is, we imagine, unknown to most of our readers. It consists in passing a time in a state of nature. If all, who could so manage it, would, upon rising in the morning, divest themselves of their night clothing and sit reading or writing for say half an hour in a suitably warm room it would greatly redound to their physical advantage. Did it ever occur to our readers that the pure air hardly ever has access to the surface of our bodies and that it was intended that it should have, for our first parents knew not the use of clothing. Of course, we must wear clothes, society demands it and he who runs counter to the demands of society is a veritable crank, who must be suppressed. But, in the privacy of our own apartments, we can, for a time, divest ourselves of these artificial garments and allow the health-giving atmosphere to have access to our natural garment, the skin. Try it; you will be well repaid for the time and trifling trouble.

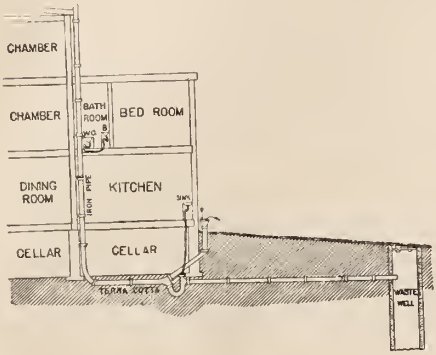
EFFECT OF OCCUPATION ON THE FACE.—A man's occupation or condition has a good deal to do with his facial expression. Intellectual pursuits, like studies of the scholarly professions, when coupled with temperate and moral habits of life, brighten the face and give a person a superior look. Magnanimity of nature or love of studies and arts will make a bright, glad face, but contrary to this a man may have a face that does not please anybody because of a love of self to the exclusion of all others, notwithstanding his learning and worldly shrewdness. Soldiers get a hard, severe look, overworked laborers constantly look tired, reporters look inquisitive, mathematicians look studious. Judges become grave, even when off the bench, and the man who has had domestic trouble looks all broken up. An example of the ludicrous side of this subject is to see a third-class lawyer stalking around a police court looking wise as an owl. The business makes the face.

THOUGHTS FAVORABLE TO LONG LIFE.—The following thoughts, suggested for Thanksgiving Day, by *Harper's Bazaar*, will, if heeded, tend to bring that ease and contentment of mind than which nothing will be so potent in the preservation of health and prolongation of life:

"Are we poor? We might be beggars. Are we beggars? We might be lepers. Are we lepers? Our sickness might be unto death. Is it unto death? We have yet a heaven beyond. For all let us give thanks. Thanks surely if we are in health of body and mind, and even in illness there is much reason and occasion to be found for a grateful heart. Has trouble come to us now? It might be worse. Are we alone? There is poorer company than ourselves to be had. Have we lost our dearest and best? They, at any rate, are not here to suffer. Has the year dealt crushing blows in business? It has not taken away also our power and will to work. Have we work? Then for that and all the rest give thanks again. Give thanks that we live and breathe and have our being in this world of wonder and light and beauty."

CARE OF THE FEET.—Tender feet, causing much inconvenience in walking, has become so common in this country, that it might almost be considdered a national misfortune. In the majority of cases this condition is due to carelessness. Very few people realize that there is nearly as much necessity for care of the feet as of the hands. Many, who will wash their hands four or five times daily will wash the feet only when they bathe. The feet should be washed daily and the toe-nails cleaned at the same time, not only under the nail, but the dead skin and dirt that has accumulated on and around the edges of the nails, particularly of the big toes should be scraped away. Try it and see how much less discomfort your feet will cause you.

MORE TERRA-COTTA.—A subscriber in Pittsburg sends us the accompanying sketch of the plumbing in his new house, and asks if it is all right. We reply that mechanically it is, but we must suggest that if he does not substitute a good-sized iron pipe for the terra-cotta beneath the cellar floor, it will be only a question of time until the pipes break and the ground becomes saturated with sewage. If the waste-pipe from the kitchen sink entered the drain on the house side of the trap it would be better.



THE PRESIDENT'S MESSAGE.—In the course of his last annual message to Congress, President Cleveland, in commenting on the work of the Department of Agriculture, says:

> "*It has checked the spread of contagious diseases of farm animals, the advance of noxious insects and destructive fungus growths,* and sought to secure to agricultral labor the highest reward of effort and the fullest immunity from loss."

Here we find that the health of the lower animals and of vegetable life are of sufficient importance to warrant consideration in a Presidential document, while, at the same time we look in vain through long columns of wisdom for one word about the *prevention of the contagious diseases of* MANKIND; the recent yellow fever epidemic is ignored as completely as though it were an occurrence of the middle ages. This fact strikes us forcibly as evidencing the apathy (rapidly disappearing) in sanitary questions among the people.

HOW I CAUGHT COLD.—"I must be getting old, I am full of rheumatism this morning," said a friend of ours recently. Upon questioning him we found that he was in the habit of drinking water very freely in the evening and, as a consequence, that he was obliged to get up in the night to empty his bladder. On the preceding night he was very warmly covered in bed and when he got up he was sweating profusely. The night was cold and when he returned from the bath room to his bed, he felt cold and clammy, his perspiration was checked and the next morning he was "full of rheumatism." Now he has a flannel wrapper by his bed, which he immediately wraps around him, and he has now grown young again, there is no more rheumatism and he was in to-day to thank us for this *little* advice.

RAILROADS AND HEALTH.—Some wise person (we know not whom) thus writes to one of our daily papers:

> "The other day in leaving Broad Street depot the writer experienced the discomfort of finding both car doors and some windows open, throwing a stream of damp air over heated passengers. The body heats a layer of air just outside of it to its own temperature. If that is suddenly removed it must be replaced by the action of lungs and heart as the human stove works.
>
> "Railway companies carefully guard the life and limb of a passenger as to accident; why not as to colds, which may mean pneumonia and death? The helpless passenger is at their mercy. They would not allow a

stream of cold water to flow through the car over the passengers. Damp air has a similar result. The brakeman should rule as an acknowledged officer. The side windows should be fastened down in winter and the upper ventilators do the needed work, and a thermometer guide the temperature. Law rules all else on railways, why not ventilation?"

CELLARS ABOVE GROUND.—Is there any reason, beyond custom, why cellars are made below ground? He who would live in one of our cellars of to-day would be considered a very foolish person, yet that is practically what we all do in winter, for while we do not descend to it, by the aid of the furnace we bring it to us, in so far, as all the air we breathe is really cellar air, save in a few exceptional cases. Nearly all cellars are dark, musty, illy ventilated, inaccessible and in many cases, damp abodes of disease germs and are responsible for much of the *mysterious* disease that afflicts humanity. Is there any reason why cellars should not be *above ground*? It would cost less to have them so, and they would be purer, brighter and more healthy, They would necessitate higher front steps, but is this an insurmountable objection.

SLEEP FOR BRAIN-WORKERS.—James Payn, the novelist and correspondent, has come to the conclusion that the only salvation of our writers, and literary classes in general, lies in going to bed early, getting ten hours of sleep and understanding that brain-work needs more complete and certain recuperation than ordinary physical labor. The office and necessity of sleep is getting to be better appreciated. Little is heard nowadays about burning midnight oil. Obedience to physiological laws alone will enable a man to escape mental break-down at an early age. Genius cannot override nature. It is impossible to turn night into day or to habitually do two days' work in one. Common sense and method are better than brilliancy and judgment is in the end ahead of genius.

POLLUTED WATER.—The people of St. Ambrose, Quebec, Canada, have for some time past complained of the bad condition of the water they have used from the city reservoir. The authorities, upon emptying the reservoir, to their astonishment discovered the partly decomposed bodies of eleven children. It is supposed that they were the bodies of infants thrown in this pool after having been murdered.

THE UTILIZATION OF GARBAGE.—One of our subscribers asks whether house slops could not be utilized as manure. We cannot definitely answer the question, but the suggestion occurs to us as well worthy of consideration, and we would like to have some words on the subject. From the standpoint of economy it would be a great thing if garbage could be so utilized.

HARMFUL WEEDS.—The unsightly growth of weeds may not be detrimental to health, but they are a ready hiding-place for slops and refuse. These become putrid and poison the air and pollute the earth. Throw nothing out to be covered by weeds. Give the sun a fair chance.—DR. J. M. SHAFFER, *Keokuk Board of Health.*

A MOHAMMEDAN CENTENARIAN.—Hadji Sulyman Saba, a Mohammedan gentleman residing in Constantinople, died recenty having reached the very respectable age of 132. He had seven wives, sixty sons and nine daughters and had survived them all. At the time he married his last wife he was 98, and when she joined the majority he was still so far under the influence of love's young dream that he wanted to marry again, but the state of his finances did not permit of any further participation in matrimonial joys. With the exception of meat at the Bairam festival he lived exclusively on barley bread and beans, drinking only water, but on this spare diet he managed to preserve his health so well that until four days before he ended his long career he did not know what it was to be ill.

THE HYGIENE OF GLOVES.—There is something more solid than even fashion as an argument in favor of wearing gloves, When we reflect how often daily we handle all sorts of objects that have been previously handled by all sorts of people, we shudder as we realize how much dirt and possibly disease may be clinging thereto, and when we know that our skin is always giving forth a greasy matter that will tend to make this dirt or disease germ stick to our hands and so, in time, be carried to our mouths, we must realize that there is here a real danger. Let us therefore cultivate the habit of glove wearing in the street that we may avoid this risk ; we will then not only be in the fashion, but we will be safe from one danger at least.

THE VIRULENCE OF DIPHTHERIA.—An outbreak of diphtheria in one of the Minnesota towns has lately been reported to the Secretary of the State Board of Health of that State, and is instructive in some particulars. A certain physician had recently come home on a visit from a hospital, where he had been serving as an "interne," and where cases of diphtheria had prevailed shortly before. He arrived April 24th, and on the 16th of that month, with his daughter, took dinner with a Mr. Sperry and family. April 18th, the eight-year-old boy of Mr. Sperry and the doctor's daughter were attacked with diphtheria. The doctor's daughter died with the disease, and all of the ten children of Mrs. S. and both their parents successively contracted the disease. Only one child died in the Sperry family.

COVER THE EARS.—Now that the cold weather is upon us, we will save many an earache, and there will be less deafness if we cause our children to wear woolen caps long enough to pull down over the ears and see to it that they are so pulled down before going out. This is a simple precaution, but its observance will save us and our children a world of future misery and mortification. It is these little trifles that we are apt to overlook and their importance cannot be overestimated,

BOILED MILK.—From the *Sanitary Inspector* we learn that every morning, when the German housewife receives her quart of milk, she immediately places it over the fire and brings it to a brisk boil. Boiled milk is not relished by many who are not accustomed to it ; but most people come to like it decidedly after they have used it a short time. In view of the fact that milk may be the medium for the transmission of several diseases, we should do well to adopt the foreign custom of sterilizing it.

STATE BOARD OF HEALTH
AND
VITAL STATISTICS,
OF THE
COMMONWEALTH OF PENNSYLVANIA.

OFFICERS AND MEMBERS.

PRESIDENT,

David Engleman, M. D., of Easton.

SECRETARY,

Benjamin Lee, M. D., of Philadelphia.

MEMBERS,

Pemberton Dudley, M.D., of Philadelphia.
David Engleman, M. D., of Easton.
J. F. Edwards, M.D., of Philadelphia.
J. H. McClelland, M. D., of Pittsburg.
Howard Murphy, C. E., of Philadelphia.
George G. Groff, M.D., of Lewisburg.
Benjamin Lee, M. D., of Philadelphia.

PLACE OF MEETING,

Supreme Court Room, State Capitol, Harrisburg (unless otherwise ordered).

TIME OF MEETING,

Second Wednesday in May, July and Nov.

EXECUTIVE COMMITTEE,

PEMBERTON DUDLEY, M. D., Chairman.
HOWARD MURPHY, C. E.
JOSEPH F. EDWARDS, M. D.
BENJAMIN LEE, M. D., Secretary.

Place of Meeting,
(Until otherwisd ordered).
Executive Office, 1532 Pine St., Philad'a.

Time of Meeting,
Third Wednesdays in January, April, July and October.

Secretary's Address,
1532 Pine Street, Philadelphia.

Bureau of Registration and Vital Statistics.
Department of Internal Affairs,
State Capitol, Harrisburg.

State Superintendent of Registration of Vital Statistics.
BENJAMIN LEE, M. D.

SPECIAL REPORTS.

MINUTES OF THE ELEVENTH REGULAR MEETING OF THE STATE BOARD OF HEALTH OF PENNSYLVANIA.

The eleventh regular meeting was held on Wednesday, November 14th, 1888, at the room of the Secretary of the Department of Internal Affairs, at Harrisburg, at 3 P. M. Present, Drs. Edwards, Dudley, Groff and Lee, and Mr. Murphy. A telegram was received from Dr. McClelland announcing that it would be impossible for him to attend. In the temporary absence of the President, Dr. Edwards was called to the chair.

The minutes of the tenth regular meeting held at Harrisburg, Wednesday, July 11th, 1888, and of a special meeting held at the Executive Office, Philadelphia, Friday, August 31st, 1888, were read and approved. Dr. Dudley gave notice that at the proper time he would move an amendment to the By-Laws in reference to the reading of the minutes of special meetings.

ANNUAL REPORT OF THE SECRETARY.

The Secretary then read his fourth annual report to the Board.

It was accepted with the thanks of the Board and ordered to be transmitted to his Excellency, the Governor, together with the minutes of the Board for the past year, as the annual report of the Board. The Secretary then proceeded with his customary report of official acts since the last regular meeting, which included the following items:

GLANDERS IN MONROE COUNTY.

1. Continuance of the proceedings in refence to the prevalence of glanders among horses in Monroe county.

The Secretary, together with the President, Dr. Engleman, and the Inspector of the District, Dr. McIntire, attended a conference, with Secretary Edge of the Board of Agriculture and State veterinarian Bridge, in which the parties owning the diseased animals participated. Certificates of value were issued to them by Mr. Secretary Edge, with the understanding that he would use his best efforts to get the legislature to appropriate a sufficient amount to compensate them for their loss.

ANIMALS SLAUGHTERED.

The following day the Secretary accompanied the State veterinarian to the farms where the diseased animals were and was witness to their being slaughtered and to the post mortem examination which demonstrated the acuracy of the diagnosis.

POLLUTION OF WELLS AT NEWVILLE.

2. An analysis of water from a well in Newville, suspected of causing typhoid fever, showing the well to be greatly contaminated. Analysis made by Dr. Charles M. Cresson.

LICENSING SLAUGHTER HOUSES.

3. A letter from the Secretary to George B. Shock, Esq., City Solicitor of Lebanon, on the propriety and importance of subjecting slaughter houses to a license.

POLLUTION OF ICE SUPPLY TO WEST CHESTER.

4. A letter from the Secretary to the Secretary of the Board of Health of West Chester, recommending that the carts dispensing polluted ice be compelled to display a placard stating the source from which the ice was obtained, and that the State Board of Health forbade its being brought into contact with food or drink.

INSPECTION AT MALVERN.

5. Report of an inspection at Malvern, Chester county, showing that reports of fever in that village were grossly exaggerated. Inspection made by William B. Atkinson, M. D.

PORK FROM PENFIELD.

6. Report on a specimen of pork sent from Penfield for examination. Analysis by Dr. Leffman showed no noxious contamination.

INSPECTION OF MILITARY CAMPS.

7. Report of an inspection of Camp Phil. Sheridan, at Mt. Gretna, by William B. Atkinson, showing decided advance in camp hygiene.

8. Inspection of Camp Slemmer, by Howard Murphy, C. E., and the Secretary, also generally complimentary to the efficiency of the medical officers.

9. Inspection of Camp Ord, by Dr. J. L. Stewart, noting lack of proper drainage, and ignorance on the part of both officers and men of the detail of camp hygene.

SANITARY CONDITION OF CARBONDALE.

10. The sanitary condition of Carbondale, as shown in communications from the Board of Health of that town, from numerous citizens and from the report of Medical Inspector L. H. Taylor, together with a letter of advice from the Secretary to the Mayor of Carbondale, urging important sanitary reforms which are evidently grievously needed.

INSPECTION AT WEST MANAYUNK.

11. Report of an inspection at West Manayunk, by William B. Atkinson, M. D., made at the request of the Board of Health, of the city of Philadelphia. This report indicated a probable source of pollution of the Schuylkill river at a point about two miles above the Belmont water works.

TYPHOID FEVER AT BELLEFONTE.

12. Report of eleven cases of typhoid fever at Bellefonte, attributed to polluted well water. Dr. H. K. Hay. Samples requested for analysis.

13. Inquiry as to the right of a D. D. S. to practice implantation of teeth. Answered affirmatively, provided the individual is properly registered.

INSPECTION AT DOYLESTOWN.

14. Report of an inspection of a bone boiling establishment at Doylestown. This was a second inspection, the establishment having been complained of before. The report showed that the proprietor had complied with most of the instructions of the Board, and that but little was needed to put the place into good sanitary condition.

QUARANTINE STATION AT CHANDELEUR ISLAND.

15. Notification from the supervising Surgeon General of the United States Marine Hospital Service of the establishment of a new quarantine station at Chandeleur Island, at the mouth of the Mississippi river.

POLLUTED WELLS AT MECHANICSBURG.

16. Analysis of water from several wells at Mechanicsburg, at the request of the chairman of the Highway Committee, Mr. Edward S. Wagner, made by Dr. Charles M. Cresson, showing one well to be comparatively pure and two to be seriously polluted with cesspool and slaughter house drainage. Wells ordered to be disused.

YELLOW FEVER AT THE DELAWARE BREAKWATER.

17. Report of cases of yellow fever at the Delaware breakwater on the brig "Teneriffe" from Havana, by Surgeon P. Bailhache, of the U. S. Marine Hospital Service,

showing that the vessel lay at the "Tallapedia" dock with her boom directly overhanging a yellow fever dead house. To be included in report.

RULES OF NATIONAL QUARANTINE.

18. Circulars from the supervising Surgeon General of the U. S. Marine Hospital Service, furnishing information as to the rules adopted for enforcing national quarantine. To be included in report.

INSPECTION AT DALLAS.

19. Inspection of nuisances at Dallas by Dr. L. H. Taylor, Medical Inspector. The inspector found a filthy slaughter house to constitute a nuisance and the Secretary had ordered it abated. His action was sustained.

INPECTIONS AT ST. MARY'S.

20. Report of an inspection at St. Mary's, Elk county, by Dr. Spencer M. Free. A stream running through the town was found to be dangerously filthy. The Secretary addressed a letter of advice to which the Burgess replied that he was quite able to take care of the town. A fact which its sanitary condition would not have led an unprejudiced observer to suspect.

INSPECTION AT CHESTER HEIGHTS.

21. Inspection of an encampment at Chester Heights, by William B. Atkinson, M. D., showing careful precautions to be observed.

ROSEMONT.

22. Inspection at Rosemont. William B. Atkinson, M. D., inspector. Decomposing garbage. Ordered to be removed.

TOWER CITY.

23. Inspection at Tower City, by William B. Atkinson, M. D., showing dangerous proximity of drinking wells, slaughter houses and cesspools, and entire absence of proper drainage. The physicians of the place report sixty cases of fever since last spring. Order for abatement of nuisance sent by the Secretary.

SOUTH BETHLEHEM.

24. A letter from the President of the Board of Health of South Bethlehem, describing a foul stream through the town and inquiring whether the property owner through whose land it passes could be compelled to arch it over. The Secretary had replied in the negative, and advised that the town should assume the expense. Action approved.

ORBISONIA.

25. Sanitary condition of Orbisonia. Communication from Board of Health, and Dr. G. W. C. James, Local Medical Inspector. Order for abatement sent to Borough Council.

SUSQUEHANNA.

26. Sanitary condition of Susquehanna. Dr. Levington.

GREENSBURG.

27. Sanitary condition of Greensburg.

PLYMOUTH.

28. Sanitary condition of Plymouth, Luzerne county. This indicated so serious a condition of affairs that the Secretary had written to complainants and to Medical Inspector Taylor endeavoring to arrange an interview with the Council, the State Board of Health and all citizens interested in hygienic reform, as a step towards warding off a repetition of the tragedy of four years ago.

NEW BETHLEHEM.

29. Report of sanitary condition of New Bethlehem. All of these reports describe a state of things only too common in Pennsylvania, villages, polluted wells, grounds honeycombed with cesspools, no drainage, universal filth. Nothing could more plainly and painfully indicate the urgent need for local Boards of Health.

MOUNT CARMEL.

30. Report of an inspection at Mt. Carmel in reference to an epidemic of typhoid fever indicating that absolutely no precautions had been taken to prevent its spread, and that all the local conditions were advantageous to its development. The inspector, Dr. Leiser, distributed circulars on the prevention of typhoid fever and sent specimens of the reservoir water and of the water of a suspected well. These had been analysed by Dr. C. M. Cresson, showing the reservoir water to be sufficiently pure for household use, but the well water to be very seriously contaminated.

POLLUTION OF THE WATER SUPPTY OF DANVILLE.

31. Complaint of pollution of the water supply of Danville by the Pennsylvania State Hospital for the Insane, by T. W. Beaver, Esq., of Danville. The Secretary had written to Dr. Schultz, the Superintendent of the Asylum, informing him of the complaint. He had in reply stated that the Council of Danville had arranged for a

meeting with the trustees of the Hospital to discuss the subject. The secretary had requested immediate information as to the result of the conference and had written to Mr. Beaver, informing him that the Board would await the report of the conference. The action of the Secretary was approved, and he was instructed to assure the complainants that the Board would do all in its power to protect the water supply of Danville from pollution.

PROSECUTION OF NELSON COWAN.

32. Letter from District Attorney Lenahan, stating that the prosecution of Nelson Cowan had begun *in re* Schooley Shaft.

CORRY.

33. Complaints of citizens of a filthy tannery at Corry. The Secretary considered that the local Board of Health ought to be able to suppress this nuisance.

WATER SUPPLY OF MILTON.

34. Complaint of the Borough Council of Milton of the character of the water furnished the town by the water Company, inquiring whether Boards of Health could compel water companies to furnish pure water.

35. The Secretary replied that there was no law whatever upon the subject, and offered to make an inspection, if the Council desired to bring suit.

SANITARY CONDITION OF ALTOONA.

36. Sanitary condition of the suburbs of Altoona, by Charles B. Dudley, Medical Inspector and member of the Altoona Board, accompanied by a letter containing suggestions as to the requirements for sanitary legislation for small towns. Dr. Dudley's letter was ordered to be included in the annual report.

TYPHOID FEVER AT OAKDALE STATION.

37. Report on the prevalence of typhoid fever at Oakdale Station, Allegheny county, by A. C. Stevenson, M. D., tracing its existence to filthy conditions.

VACCINATION OF CORNPLANTER INDIANS.

38. Report on vaccination of the Cornplanter tribe of Indians in Warren county, by Dr. J. L. Stewart, Medical Inspector and Dr. Arthur A. Woods, Health Officer of Erie.

INSTRUCTIONS AS TO QUARANTINE OF SMALL-POX.

39. In this connection the Secretary had sent instructions to Inspector Stewart as to the steps to be taken should small-pox become threatening. The instructions of the Secretary were approved.

DIPHTHERIA IN NEW BETHLEHEM.

40. Report of an epidemic of Diphtheria in New Bethlehem, caused by general foulness and neglect of Sanitary precautions.

On motion a recess was now taken until 8 P. M.

SECOND SESSION.

At 8 P. M. the Board re-assembled. The reading of the Secretary's report was resumed. The first topic taken up was

DECLINE OF SMALL-POX IN PHILADELPHIA.

41. The decline of the small-pox epidemic in Philadelphia. The total number of cases reported had been three hundred and seventy-six (376), with eighty (80) deaths to which must be added that of a man who contracted the disease in Philadelphia and died in Bentleysville. The epidemic seems now to have been stamped out.

SMALL-POX AT MUNHALL STATION.

42. Report of Dr. J. R. Thompson of a case of small-pox in a newly arrived Hungarian emigrant at Munhall Station, Allegheny county.

RED CLOVER BLOSSOMS ANALYSED.

43. Report of an analysis of so-called extract of red clover blossoms, by Dr. Henry Leffman.

VOUCHERS PASSED.

44. No. 238 to No. 244 inclusive, which had been audited and approved by the Executive Committee were read and ordered to be paid.

ADDITIONS TO LIBRARY.

45. The additions to the library during the past year were reported to be of books, ninety-eight (98), and of pamphlets, one hundred and eighty-four (184.)

ADDITIONAL MEDICAL INSPECTORS.

46. The following is a list of the Medical Inspectors appointed during the year:

DATE.	NAME.	RESIDENCE.	DISTRICT.
Jan. 11,	Wm. Leiser, Jr.,	Lewisburg,	Northumb'd.
"	J. L. Stewart,	Erie,	Lake.
"	Chas. McIntire,	Easton,	Lehigh.
May 16.	C. L. Gummert,	Brownsville,	South'n Tier.
"	J. R. Thompson,	Pittsburg,	Allegheny.

Dr. Leiser was appointed to fill the vacancy created by the the promotion of Dr. Groff to a seat on the Board.

Dr. J. R. Thompson to fill the vacancy created by the resignation of Mr. L. H. Hunter, who had received an appointment under the Pittsburg Bureau of Health. The other appointments were original. There is now but one district without an appointee, the Juniati district. The Board may congratulate itself on having a corps of intelligent and generally efficient inspectors.

DISTRIBUTION OF SECOND ANNUAL REPORT.

47. The distribution of the second annual report was then detailed showing eleven hundred and fifty-five (1155) copies to have been distributed up to the present time.

CIRCULARS, FORMS AND MANUALS.

49. The following is a list of circulars, forms and manuals prepared for distribution during the year, with the classes of persons for whom they were designed:

1. Circular letter to physicians on the importance of accurate diagnosis in fevers and the advantage of the earth-closet. For the medical profession.

2. Circular letter to physicians duriug epidemics. For the medical profession.

3. Model ordinauce for the better preservation of the public health in cities and boroughs of Pennsylvania. Secoud edition. For Mayors, Burgesses and Councils.

4. Return of a birth. For Boards of Health.

5. Return of a Death, For Boards of Health.

6. Return of a Still-birth. For Boards of Health.

7. Return of a communicable Disease. For Boards of Health.

8. Disinterment Permit. For Boards of Health.

9. Manual of School Hygene. For teachers.

10. Transit Permit for Dead Bodies. For Boards of Health.

11. Notification of Contagious Diseases. For Secretaries of Boards of Health.

12. Supplement to the Model Ordinance. For Mayors and Boards of Health.

13. Circular on the Prevention of Scarlet Fever. Second Edition. For Physicians and Families,

14. Circular on the prevention of Diphtheria, Second Edition. For Physicians and Families.

15. Circular on the Prevention of Typhoid Fever. Second Edition. For Physicians and Families·

16. Circular on the Prevention of Contagious Diseases. Second Edition. For Physicians and Families.

17. Circular on Quarantine and Disinfection. For Physicians.

18. Manual of Camp Hygiene. For Medical Officers of the National Guard.

19. Questions for the Sanitary Inspection of Schools. For Inspectors.

20. Form for Report of Analysis of Food. Form for Report of Analysis of Drugs. Form for Report of Analysis of Candy.

21. Notice of Adulteration of Food.

22. Notice of Adulteration of Drugs.

23. Notice of Adulteration of Candy.

24. Blanks for Registration of Physicians. For Prothonotaries.

25. Blanks for Registration of Marriages. For Clerks of Orphans' Court.

26. Report of Sanitary Convention at Philadelphia. General Distribution.

27. Compendium of Laws relating to Public Health and Safety. For Councils, Boards of Health, Healh Officers, Inspectors, etc.

CIRCULARS IN CYCLOSTYLE.

50. The following are occasional circular letters which have been issued in Cyclostyle:

(1.) Resolution declaring Leprosy to be a communicable disease to be returned. Sent to all Boards of Health.

(2.) Forms for the guidance ef Boards of Health in organizing their bureaus of Registration. Sent to all Boards of Health.

(3.) Extract from the Laws of Pennsylvania on the Inspection of Petroleum.

(4.) Precautionary letter in regard to the Prevention of Small-pox. Sent to all Boards of Health and Borough Councils.

(5.) Resolution with regard to the Isolation of Lepers. Sent to all Boards of Health and daily newspapers.

(6.) Action of the Board in vaccinating the Cornplanter Indians. Sent to Boards of Health and to daily newspapers.

(7.) Request for Registration of Physicians in certain counties. Sent to Inspectors and to Secretaries of County Medical Societies.

(8.) Request for information as to the number of marriages registered in each County Seat to all clerks of Orphans' Courts.

(9.) Request for missing copies of Annual Reports of Boards of Health of States and cities. Sent to Secretaries of Boards.

This concluded the Secretary's report, which was then adopted as a whole.

The hour of 10 o'clock having arrived and reports of Standing Committees being next in order, it was resolved to postpone their consideration until the following day, and Board on motion adjourned to meet at 9 A. M. the next morning.

THIRD SESSION.

Pursuant to adjournment the Board met at 9 A. M. Thursday, November 15th, at the Bolton House.

EXECUTIVE COMMITTEE.

The first business in order was the report of the Executive Committee. Dr. Dudley, the chairman, reported that three meetings had been held since the last meeting of the Board, at which bills to the amount of $1,266.61 representing vouchers No. 232 to No. 245 had been audited and approved. The Secretary had been authorized to subscribe to a journal of veterinary medicine and to the Medical Jurisprudence Society of Philadelphia. It had changed the time of its meetings to correspond more directly with the fiscal year of the Board, and thus avoid the necessity for so many special meetings. It had also authorized the Secretary to draw on the Treasury for funds to meet the assessment of the State Boards of Health. Conference for expenses incurred in inspection of quarantines. On motion the report was accepted and the recommendations of the committee approved.

COMMITTEE ON REGISTRATION.

The Committee on Registration and Vital Statistics, Dr. Benjamin Lee, chairman, reported that the work of Registration was now fully inaugurated in the Bureau of Vital Statisties in the Department of Internal Affairs so far as the registration of practitioners of medicine and surgery, and of marriages was concerned. The Secretary had offered compensation at the rate of five cents per name for the registration of physicians and under that stimulus, he was meeting with such encouraging success that he hoped to present a complete roster of physicians with the next annual report. The returns of marriages were so meagre, amounting to not more than fifteen thousand during the three years of registration that ony crude deductions could be made. Some interesting results had been arrived at however by the industry of Mr. I. B. Brown, Deputy Secretary of Internal Affairs, which ought to be included in the annual report of the Board. The number of marriages reported up to date was given by counties. A ruling of Judge Elwell, given in the Common Pleas of Columbia county in the matter of the registration of physicians, was presented with the recommendation that it be included with the report of the committee. The report was accepted and the recommendations of the committee approved.

COMMITTEE ON PREVENTABLE DISEASES.

The Committee on Preventable Diseases and the supervision of Travel and Traffic, Dr. Edwards, chairman, reported that the material for the report on the sanitary condition of the mining regions of the eastern part of the State, was now ready to be put into shape, and on motion of Dr. Lee, he was authorized to publish it, as the report of the Committee, in the ANNALS OF HYGIENE, after submitting it to the Secretary.

COMMITTEE ON WATER SUPPLY.

The Committee on Water Supply, Drainage and Sewerage, Mr. Howard Murphy, chairman, reported on the proposed plan for disposal of the sewage of Altoona, presenting a paper on the subject by Dr. Charles B. Dudley, Medical Inspector and member of the Board of Health of Altoona. On the drainage system of the Norristown Insane Hospital, which was criticised as in danger of polluting the air by its immense surface decomposition in the autumn when vegetation is inactive; on the inspection of the camp of the First Brigade, N. G. P., near Norristown, and on proposed legislation to regulate the introduction of new water supplies into towns in Pennsylvania.

LEGISLATION FOR THE PROTECTION OF WATER SUPPLIES.

The report was accepted and after prolonged discussion the subject of legislation for water supplies was referred back to the committee with instructions to draw up a bill for presentation to the next legislature after submission to the committee on sanitary legislation. There were no reports from the remaining standing committees.

REPORT OF COMMITTEE ON ANNALS OF HYGIENE.

Reports of special committees being in order, Dr. Benjamin Lee, chairman of the committee on the relations of the ANNALS OF HYGIENE to the Board, reported that the instructions of the Board had been fully carried out. The report was accepted and the committee discharged. The next order of business was the appointment of standing committees for the ensuing year. The President announced that he would re-appoint the committees throughout as at present constituted. The committees therefore are:

1. Executive Committee, Drs. Dudley, Edwards, Lee and Mr. Murphy.

2. Committee on Registration and Vital Statistics, Drs. Lee and Groff,

3. Committee on Preventable Diseases and the Sanitary Supervision of Travel and Traffic, Drs. Edwards and Dudley.

4. Committee on Water Supply, Drainage and Mines, Mr. Howard Murphy and Dr. McClelland.

5. Committee on Public Institutions and School Hygiene, Dr. McClelland and Mr. Murphy.

6. Committee on Adulterations, Poisons and other special sources of danger to life and limb, Drs. Dudley and Engleman.

7. Committee on Sanitary Legislation Rules and Regulations, Drs. G. G. Groff and Dudley.

COMMITTEE ON SANITARY CONVENTION.

On motion of the Secretary, Drs. McClelland, Groff and Edwards were appointed a committee to make preparations for the Sanitary Convention to be held in Pittsburgh in connection with the May meeting. On motion the name of the Secretary was added to the committee.

CARD OF INFORMATION.

The Secretary was authorized to print a card both on card-board and stout linen paper, containing essential information as to the members, inspectors, times of meeting, committees and such other points as he might deem expedient.

The hour for the regular meeting at Harrisburg was, on motion, fixed at 9.30 A. M., until further action.

AMENDMENT TO BY-LAWS.

Section 2, of Article IV of the By-Laws was amended by striking out paragraph 3, and by altering paragraph 2 so that it should read as follows:

"The minutes of previous meetings shall be read."

NEW EDITION OF BY-LAWS.

The Secretary was authorized to issue a new edition of the "By-Laws and Regulations of the Board."

MANUAL OF CAMP HYGIENE TO BE DISTRIBUTED.

The Secretary was instructed to send copies of the Manual on Camp Hygiene to the proper officers of each brigade of the National Guard before the establishment of next year's camps.

On motion the Board adjourned.

* * *

INFLUENCE OF CONFINED AIR IN CAUSING CONSUMPTION.—Although it is now generally admitted that consumption is a parasitical disease, we should not lose sight of those auxiliary influences which increase the receptivity of the body for the infection, and when infection has already occurred, make the patient a readier victim for the invading bacilli. One of the most potent of these accessory causes is undoubtedly close, confined and re-breathed air; and those physicians who have gained any special reputation for success in the treatment of this class of diseases, have had a very clear appreciation of this fact, and have persistently urged their patients to live in the open air. A while ago Dr. Brown-Sequard read a paper before the Academy of Sciences, confirmatory of the bad effects of confined air and of the good effects of fresh air. He narrates that in 1869–70 he inoculated subcutaneously a hundred guinea-pigs with tuberculous virus, without the loss of a single animal, but the cages were kept continually hanging in the open air of the garden. Another series were inoculated in the same way, but they were condemned to have their cages remain in the close air of the laboratory. Nearly all of these died tuberculous. He cites also the histories of many men who had been in the cavernous stage of consumption, but who recovered completely, after living and sleeping two years continually in the open air.—*Sanitary Inspector.*

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THE
Annals of Hygiene.

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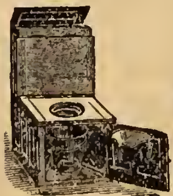

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